CCD-F450E
RMT-502

SERVICE MANUAL

AEP Model
UK Model
Australian Model
E Model

Video 8

U MECHANISM

SPECIFICATIONS

System

Video recording system	Rotary two-head, Helical scanning FM system
Audio recording system	Rotary head, FM system
Video signal	PAL colour, CCIR standards
Usable cassette	8 mm video format cassette
Tape speed	SP mode: Approx. 20.051 mm/second LP mode: Approx. 10.058 mm/second
Recording time	SP mode: 1 hour and 30 minutes (P5-90) LP mode: 3 hours (P5-90)
Playback time	SP mode: 1 hour and 30 minutes (P5-90) LP mode: 3 hours (P5-90)
Fast-forward/rewind time	Approx. 6.5 min. (P5-90)
Image device	CCD (Charge Coupled Device)
Viewfinder	Electronic viewfinder (black and white)
Lens	Combined 8 × power zoom lens f=8.5 to 68 mm, F1.6 with macro Filter diameter: 46 mm
Auto focus system	TTL
Colour temperature	Automatic, HOLD, ☼ (indoor) 3,200K, ☀ (outdoor) 5,800K
Minimum illumination	3 lux
Illumination range	3 lux to 100,000 lux (0.3 to 9294 footcandles)
Recommended illumination	More than 100 lux (9 footcandles)
Aperture correction	Automatic back light adjustment

Input and output connector

Video input (Australian, E Model)/output	Phono jack, 1 Vp-p. 75ohms unbalanced sync negative
Audio input (Australian, E Model)/output	Phono jack Input (Australian, E Model) : −7.5dBs, input impedance more than 47 kilohms Output: −7.5dBs, at output impedance less than 1 kilohms
RFU DC OUT	Special minijack, 5 V DC
Earphone jack	Minijack, 8-ohm impedance
Remote jack	Stereo mini-minijack
MIC jack	Minijack, –66 dBs, low impedance With 2.5 to 3 V DC output, impedance 6.8 kilohms
Microphone power output jack	Special minijack, 5 V DC

— continued on next page —

For MECHANICAL ADJUSTMENTS, refer to the "8mm Video MECHANICAL ADJUSTMENT MANUAL III (U MECHANISM)" (9-972-732-11)

MICROFILM

8 VIDEO CAMERA RECORDER

SONY®

General

Power requirements	On battery mounting surface 6.0 V (battery pack) 7.5 V (AC power adaptor) 9.0 V (alkaline batteries)
Power consumption	6.3 W (camera recording) including the viewfinder
Installation	Vertically, horizontally
Operating temperature	0°C to 40°C
Storage temperature	–20°C to +60°C
Dimensions	Approx. 111 × 139 × 321 mm (w/h/d) including the lens hood
Weight	Approx. 1.1 kg excluding the battery and cassette
Microphone	Electret condenser microphone, omni-directional monaural type

Wireless Remote Commander

Remote control system	Infrared control
Command mode	VTR 2
Power requirements	3 V DC, 2 R6 (size AA) batteries
Dimensions	Approx. 57 × 20 × 120 mm (w/h/d)
Weight	Approx. 62 g (excluding batteries)

Design and specifications are subject to change without notice.

Note

This appliance conforms with EEC Directive 87/308/EEC regarding interference suppression.

Supplied Accessories

The camcorder is packed together with the following accessories. Check to see that everything is contained in the package.

- Remote Commander (1)
- R6 (size AA) battery for Remote Commander (2)
- Battery pack NP-66 (AEP/UK MODEL) (1)
  NP-66H (E/AU MODEL) (1)
- AC power adaptor AC-V35 (1)
- Lithium battery CR2025 (1)
- RFU adaptor RFU-90E (AEP MODEL) (1), or
  RFU-89EA (UK/E MODEL) (1)
  With the RFU-89EA, an aerial selector and a screwdriver are supplied.
  RFU-90AS (AU MODEL) (1)
- Lens cap (1)*
- Shoulder strap (1)
- Cassette tape (1) (except U.K.)

*Attached to the camcorder

SAFETY CHECK-OUT

After correcting the original service problem, perform the following safety checks before releasing the set to the customer:

1. Check the area of your repair for unsoldered or poorly-soldered connections. Check the entire board surface for solder splashes and bridges.
2. Check the interboard wiring to ensure that no wires are "pinched" or contact high-wattage resistors.
3. Look for unauthorized replacement parts, particularly transistors, that were installed during a previous repair. Point them out to the customer and recommend their replacement.
4. Look for parts which, though functioning, show obvious signs of deterioration. Point them out to the customer and recommend their replacement.
5. Check the B+ voltage to see it is at the values specified.

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK ⚠ OR DOTTED LINE WITH MARK ⚠ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

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SECTION 1
GENERAL

This section is extracted from AEP, UK MODEL instraction manual.

1-1. WARNING

To prevent fire or shock hazard, do not expose the unit to rain or moisture.

Do not open the cabinet. Refer servicing to qualified personnel only.

1-2. INTRODUCTION

How the Manual is Organized

The first section of the manual explains the preliminary steps necessary to prepare for shooting and playing back.

Other sections include shooting procedures that show how to use the features and functions of your camcorder. If you are a beginner, start with "Recording a picture using automatic adjustments". If you are very familiar with camcorders, try to shoot your picture with manual adjustments as well as automatic adjustment. If you want to record right away, see pages 11, 18 through 22.

The manual also includes how to play back a picture on a TV, how to edit your original 8mm tape onto another video tape, and how to record a picture from another video tape or TV.

If you have any problems during operation, see the "Trouble check" section.

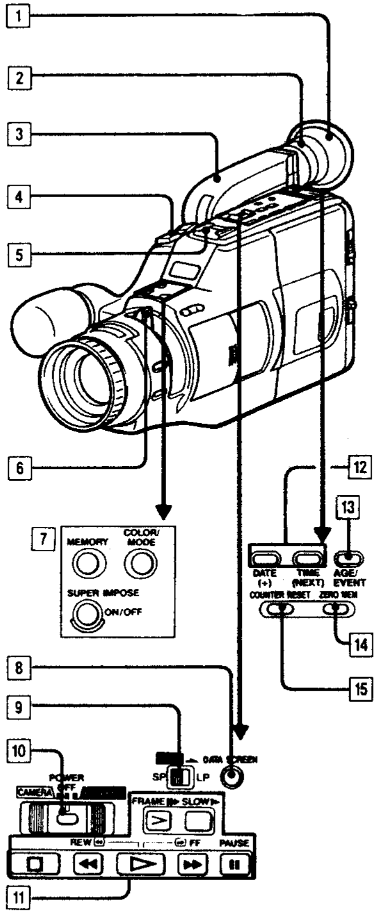
How this Manual Works

Use the information below to help you follow the instructions in this manual.

- Controls and settings on the camcorder are shown in capital letters:
  ex. Set POWER to CAMERA.
- The letter in an illustration corresponds to the letter in the text:
  ex. (A-1) or (B)
- The step number in an illustration correspond to the step number in the text.
- Notes and cautions are enclosed with lines:
  ex.
  Note on battery life
  Battery will not last as long in cold places.

1-3. IDENTIFYING THE PARTS

(A-1)



For details on the use of each part, refer to the pages indicated in the circle.

(A-1)

1 **Eyecup**

2 **Viewfinder lens adjustment ring ㉑**

3 **Viewfinder (back cover)**
The picture being recorded or played back can be monitored in black and white in here. Also, indicators which shows caution and function mode appear in here.

4 **Power zoom button ㉟**

5 **Accessory shoe**
Attach a video light, external microphone, etc. (not supplied).

6 **Zoom lever ㉟**

7 **SUPERIMPOSE buttons ㊴**
MEMORY button
COLOR/MODE button
ON/OFF button

8 **DATA SCREEN button ㊿**

9 **REC MODE (recording mode) /EDIT switch ㉒ (53)**
Switch it depending on the operating mode.

Mode	Recording	Playback	Editing
Setting	EDIT SP LP	EDIT SP LP	EDIT SP LP
Function	Recording mode switch	EDIT switch	

10 **POWER switch**
CAMERA: for camera recording
PLAYER: for playing back or editing tapes
OFF: power off

11 **Tape transport buttons ㊿ (51)**
>/❚❚▶ (forward direction/frame-by frame in forward direction)
❚▶ (slow)
□ (stop)
◀◀ REW (rewind)
▷ (playback)
▶▶ FF (fast forward)
❚❚ (pause)

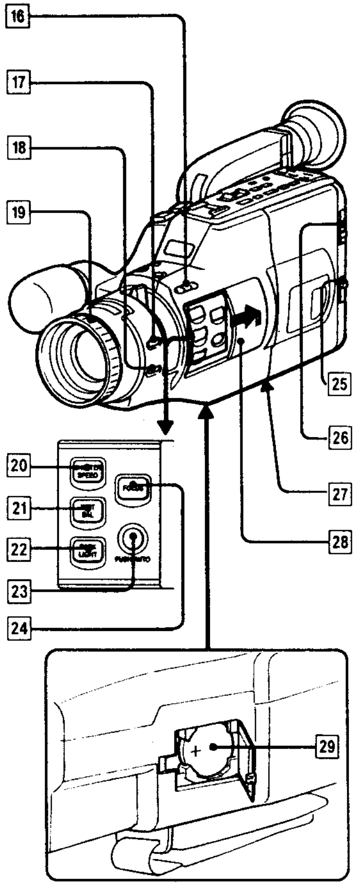
12 **DATE (+) and TIME (NEXT) buttons ⑲**

13 **AGE/EVENT button ㊸**

14 **ZERO MEM (zero memory) button ㉖ (55)**

15 **COUNTER RESET button ㉖ (55)**

(A-2)



(A-2)

16 EDITSEARCH (and ⊜ recording review) button ㉕

17 FADER button ㊱

18 MACRO AF (Auto-focusing in macro) button ㉝
Press to record close-ups with automatic focusing.

19 Lens hood (Focus ring) ㉚

20 SHUTTER SPEED button ㉞

21 WHT BAL (white balance) button ㉛

22 BACK LIGHT button ㉞

23 PUSH AUTO button ㉚

24 FOCUS button ㉚

25 BATT (battery eject) knob ⑬

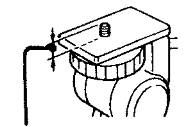
26 EJECT (cassette eject) knob ⑳

27 Tripod receptacle (bottom)

28 AUTO LOCK cover ㉘
To adjust the control such as focus, white balance, back light, or shutter speed manually, slide open this cover so that the buttons inside can be seen.

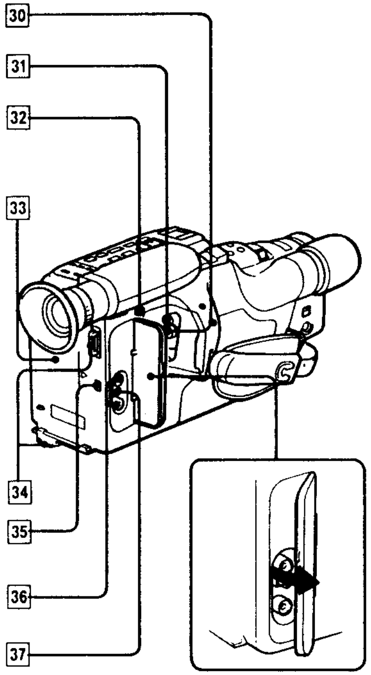
29 Lithium battery compartment (bottom) ⑱

(A-3)



Note on attaching a tripod (A-3)
When attaching a tripod other than Sony's, make sure that the length of the camera mounting screw is less than 6.5 mm. Otherwise, the screw may damage the inner parts of the camcorder.

(A-4)



(A-4)

30 START/STOP button ㉒
Press to start and stop camera recording.

31 STANDBY switch ㉒
Slide up to set the camcorder to the recording standby mode.

32 PUSH/SLIDE button (for adjusting the viewfinder)
Slide the viewfinder to a suitable position.

33 Battery mounting surface ⑬

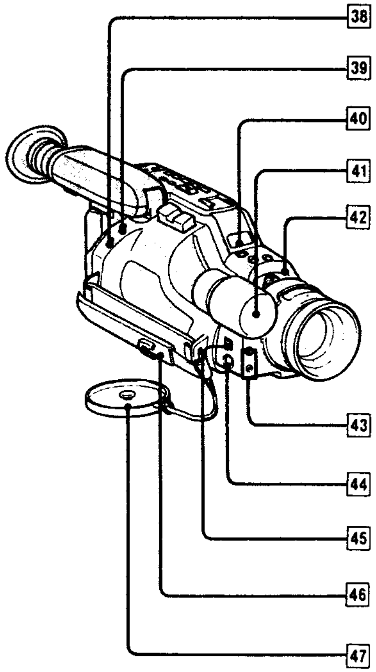
34 Hooks for shoulder strap

35 ▣ (REMOTE COMMANDER) ON/OFF switch ⑨
Set to "ON" when using the supplied wireless Remote Commander. When you do not use the Commander, set to "OFF" to keep the unit from being operated incorrectly by another Commander etc

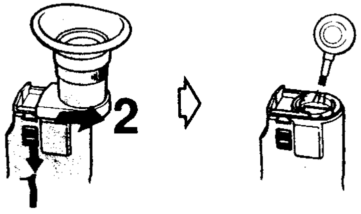
36 VIDEO/AUDIO OUT (output) jacks (phono jacks) (55)

37 RFU DC OUT (RFU adaptor DC output) jack (special minijack) ㊼

(A-5)



(A-6)



(A-5)

[38] ⊕ **(earphone) jack (minijack)** (57)

[39] **⊄ REMOTE control connector (stereo mini-minijack)**
Connect a wired remote control unit or a editing controller, etc. here.

[40] **Remote sensor** ⑨

[41] **Built-in microphone (monaural)**

[42] **Camera recording/battery lamp** (62)
Lights up during recording and blinks when the battery becomes weak.

[43] **MIC jack and DC OUT (microphone power output) jack (minijack)**
Connect an external microphone (not supplied).
The DC OUT jack supplies power to it. When connecting Sony "plug-in-power" microphones, use the MIC jack only.

[44] **REC START/STOP button (for low-position shooting)** ㉓
Use this button for easier low-position recording.

[45] **BUILT-IN MIC (microphone) switch** ㉔
Set to "WIND" when recording in a strong wind.

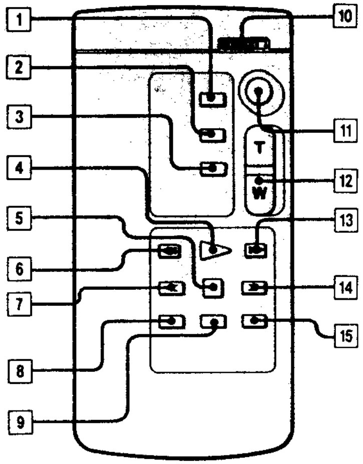
[46] **Grip strap** ⑪

[47] **Lens cap** ⑪

About ⊄ (LANC)
⊄ stands for Local Application Control Bus System. The ⊄ connector is used for controlling the tape transport of video equipment and peripherals connected to it. This connector has the same function as the connectors indicated as CONTROL L or REMOTE.

To remove dust from inside the viewfinder (A-6)
Detach the eyecup as illustrated and clean the surface of the screen with a blower.

(A-7)



Wireless Remote Commander

You can record or play back a tape from a distance. The buttons on the Commander with the same name or mark as those on the camcorder have the same function.

When you use the Commander
Be sure to set the REMOTE COMMANDER ON/OFF switch on the camcorder to "ON", and then start operation of the camcorder, with the Commander pointing towards the remote sensor. (See page 10)

(A-7)

[1] **DATA SCREEN button** ㊿

[2] **COUNTER RESET button** ㉖ (55)

[3] **ZERO MEM button** ㉖ (55)

[4] ▷ **(playback) button** ㊿

[5] □ **(stop) button** ㊿

[6] ◀◀ **(rewind) button** ㊿

[7] < /◀II **(reverse direction/reverse frame) button** (51)
Provided only on the Commander.

[8] II **(pause) button** (51)

[9] I▶ **(slow) button** (51)

[10] **HOLD switch**
Slide in the direction of the arrow to prevent the buttons from being accidentally depressed.

[11] **START/STOP button** ㉒
Press to start and stop camera recording

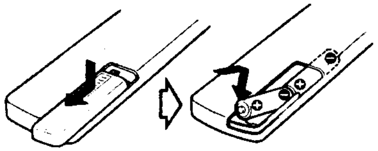
[12] **Power zoom button** ㉟

[13] ▶▶ **(fast forward) button** ㊿

[14] > /II▶ **(forward direction/forward frame) button** (51)

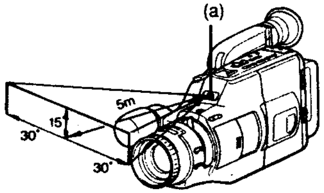
[15] **X 2 button** (51)
Provided only on the Commander.

(A-8)



Inserting batteries
(A-8)
Insert two R6 (size AA) batteries with polarity positioned correctly.

(A-9)



Remotely controllable area
(A-9)
Point the Commander towards the remote sensor (a).

Notes on batteries
With normal operation, batteries will last for about six months. However, if the commander will not be used for a long period, remove the batteries to avoid possible damage from battery leakage.

1-4. PREPARING YOUR CAMCORDER

Before recording, prepare your camcorder following the steps below:

1 Connect a power source. → see page 12

2 Set the date and time. → see page 18

3 Insert a tape. → see page 20

4 Adjust the viewfinder lens. → see page 21

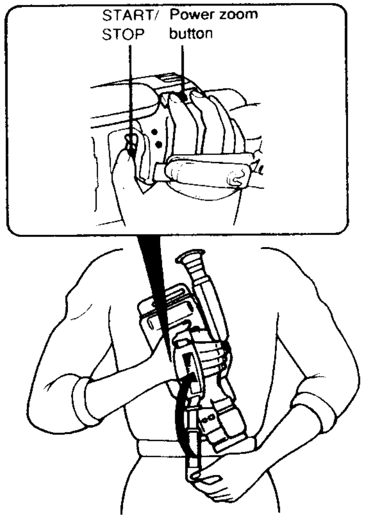
5 Adjust the length of the grip strap. **(B-1)**

6 Take off the lens cap and attach it to the grip strap. **(B-2)**

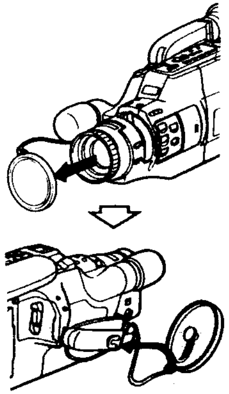
7 Close the AUTO LOCK cover. **(B-3)**
The focus, white balance, back light, and shutter speed will be adjusted automatically. If you want to adjust them manually, see page 28.

When you have completed these preparations, go to page 22.

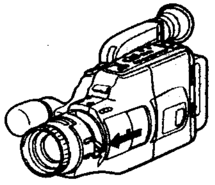
(B-1)



(B-2)

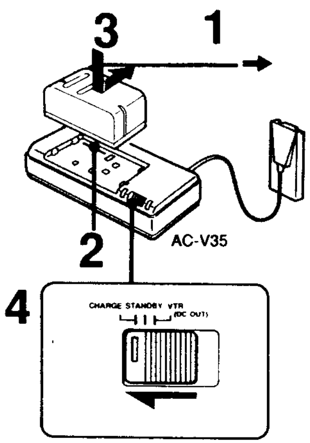


(B-3)



1-5. CONNECTING THE POWER SOURCES

(C-1)



First, Choose the Power Sources

Place	**Power source**	**Accessory to be used**
Outdoors	Battery pack	Battery pack NP-66 (supplied), NP-77H, NP-77, or NP-55
	Alkaline batteries	Battery case EBP-55 or EBP-77
Indoors	House current	AC power adaptor AC-V35 (supplied), AC-V30, or AC-V55
In the car	12 V or 24 V car battery	DC pack DCP-55, or AC power adaptor AC-V55 and car battery cord DCC-16AE

Note on power sources
Disconnecting the power source or removing the battery pack during recording or playback may damage the inserted tape. If disconnected, supply the power again immediately.

Using the Battery Pack

Step 1

Charge the battery pack. **(C-1)**

1 **Connect the AC power adaptor to a wall outlet.**

2 **Align the right side of the battery pack with the line on the AC power adaptor.**

3 **Slide in the battery pack in the direction of the arrow.**

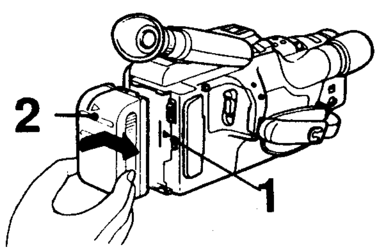
4 **Set the CHARGE/VTR selector on the adaptor to CHARGE.**

	NP-66 (supplied)	**NP-66H**	**NP-77H**	**NP-77**	**NP-55**
Required charging time	80	100	140	120	60

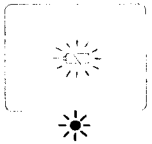
(approx. minutes using AC-V35)

See the instruction manual of the AC power adaptor for details.

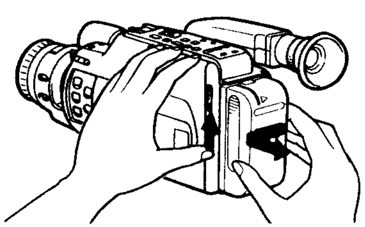
(C-2)



(C-3)



(C-4)



Step 2

Mount the battery pack on the camcorder. **(C-2)**

1 **Align the right side of the battery pack with the line on the camcorder.**

2 **Slide in the battery pack to the right.**

Notes
- Make sure the battery fits completely on the mounting surface of the camcorder. Imperfect fit may damage the projections on the camcorder.
- If your nose touches the battery pack, adjust the position of the viewfinder by sliding it while pressing PUSH SLIDE.

Battery life
A fully charged battery pack lasts for

	NP-66 (supplied)	**NP-66H**	**NP-77H**	**NP-77**	**NP-55**
Battery life	70	80	110	90	50

(approx. minutes, continuous recording when used indoors)

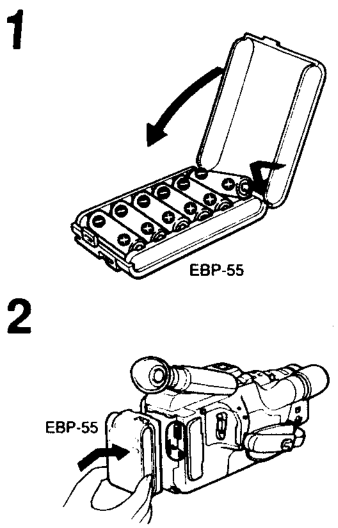
When the battery becomes weak, the indication and red lamp blink in the viewfinder. **(C-3)**
Also the camera recording/battery lamp on the camcorder blinks.
Replace the battery with a fully charged one.

To remove the battery pack (C-4)
While sliding BATT up, slide out the battery pack to the left.

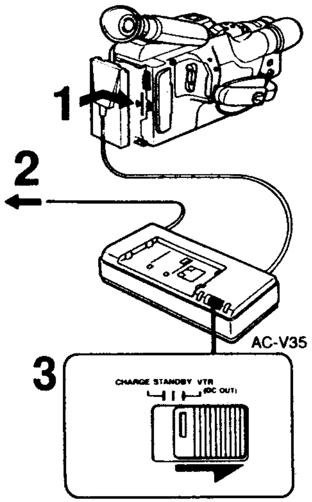
Other options for charging
- AC-V55 AC power adaptor:
  You can charge two battery packs simultaneously.
- BC-55, BC-77 portable battery charger:
  You can charge a battery pack on 100 – 240V AC.
- DC-V30 car battery charger:
  You can charge a battery pack by connecting the car battery charger to the cigarette lighter socket.

If you have an NP-4000
You can use it for long outdoor recording.

(C-5)



(C-6)



Using Alkaline Batteries

(C-5)

The EBP-77 or EBP-55 battery case is required (not supplied).

1 **Insert the R6 (size AA) alkaline batteries into the battery case.**
(12 batteries for EBP-77 and 6 batteries for EBP-55)

2 **Attach the case in the same way as the battery pack.**

Battery life (when using Sony alkaline batteries)

	EBP-77	EBP-55
Battery life	120	45

(approx. minutes)

To remove the battery case
Proceed in the same way as the battery pack. See page 13.

Notes on battery life

- Batteries will not last as long in cold places.
- No indication appears in the viewfinder to warn of a weak battery.

Using House Current

(C-6)

The supplied AC-V35 AC power adaptor is required.

1 **Align the right side of the connecting plate with the line on the camcorder, and slide it in to the right.**

2 **Connect the AC power adaptor to a wall outlet.**

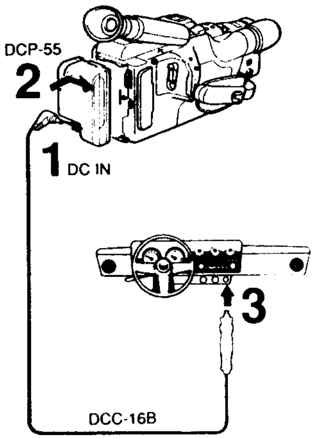
3 **Set the CHARGE/VTR selector to VTR (DC OUT).**

See the instruction manual of the AC power adaptor for details.

To remove the connecting plate
Proceed in the same way as the battery pack. See page 13.

The AC-V30 or AC-V55 AC power adaptor can also be used.

(C-7)



Using Car Battery

(C-7)

The DCP-55 DC pack is required (not supplied).

1 **Insert the DCC-16B car battery cord supplied with the DCP-55 DC pack into the DC IN jack on the DC pack.**

2 **Align the right side of the DC pack with the line on the camcorder, and slide it in to the right.**

3 **Connect the DCC-16B car battery cord to the cigarette lighter socket of a car (12 V or 24 V).**

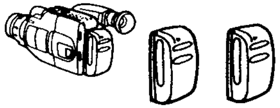
To remove the DC pack
Proceed in the same way as the battery pack. See page 13.

Other options
The AC-V55 AC power adaptor and the DCC-16AE car battery cord can also be used to operate this camcorder on a 12 V or 24 V car battery.

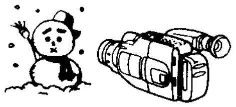
Using the Best of Battery Pack

How to prepare the rechargeable battery packs

Have a sufficient battery pack power to perform 2 or 3 times as much recording than you have planned.
"Battery life" as indicated in the instruction manual or catalogue of the camcorder is measured by the continuous recording time of the camcorder, placed at a room temperature using a full-charged battery.

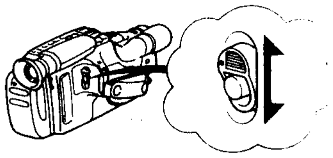


Battery life is shorter in a cold climate.
Battery efficiency is decreased and the battery will be used up more quickly.



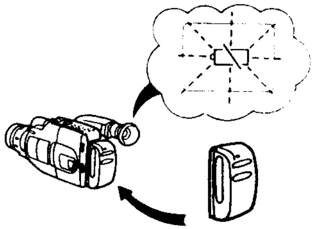
Turn the STANDBY switch of the camcorder off when not recording to save battery power.

A smooth recording can be made even if recording is stopped and started again.
While positioning the subject, selecting an angle, or looking through the viewfinder, the lens moves automatically and the battery is used. The battery is also used when a tape is inserted or removed.



When the rechargeable battery pack should be replaced

When the ▭ mark in the viewfinder changes from slow blinking to rapid blinking while you are recording,
Turn off the power switch of the camcorder and replace the battery pack. Leave the tape in the camcorder in order to obtain a smooth recording after the battery pack is replaced.

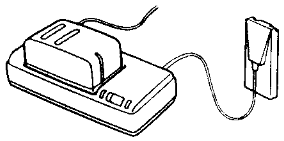


Notes on charging

Before using the battery pack, charge it sufficiently. A brand-new battery pack is not charged.

Recharge the battery pack when it is exhausted.

- If recording is completed before the ▭ mark appears in the viewfinder, it is recommended that you remove the tape set POWER to CAMERA, slide up STANDBY, and leave the camcorder until the ▭ mark blinks rapidly.
- Repeated charging while some capacity remains causes a lowering of battery capacity. However, the original battery capacity can be recovered if you fully discharge and fully charge the battery again.



Recharge the battery pack before using.
If the battery pack is charged fully but not used for a long time (about 1 year), it becomes discharged.
Charge it again but in this case the battery life will be shorter than normal. After several charging and discharging cycles, the battery life will recover its original capacity.

Keep the terminals clean

If the terminals (metal parts on the back) are not clean, the battery duration will be shortened.

When the terminals are not clean or when the battery pack has not been used for a long time, install and remove the battery pack from time to time. This will improve the contact condition. Also wipe the + and - terminals with a soft cloth or paper.

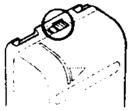
Notes on the rechargeable battery pack

Why the battery pack heats up
During charging or recording, the battery pack heats up. This means energy has been generated and a chemical change has occurred inside the battery pack, but this is not dangerous.

How to care for the battery pack

- Remove the battery pack from the camcorder after using it, and keep it in a cool place
  When the battery pack is attached to the camcorder, a small amount of current flows to the camcorder even if the POWER switch is turned off. It causes overdischarging and will shorten battery life
- The battery pack is always discharging even when it is not in use after charging Thus, it is recommended you charge the battery before using.

How to use the switch on the battery pack
This switch is provided so that you can remember the charging condition. Set the switch to the "no mark" position when charging is completed. Set the switch to the "red mark" position when the battery is used up.

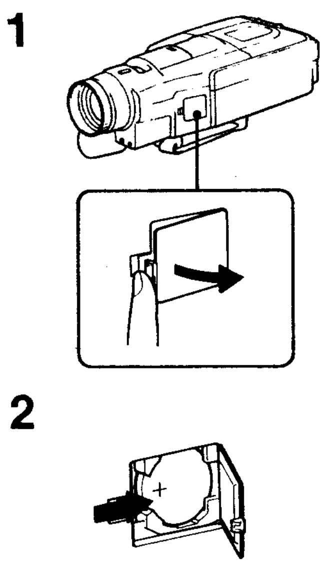


How many times can the battery pack be recharged
It can be fully charged and discharged about 500 times under normal temperatures.
If the ▭ mark blinks rapidly just after turning on the camcorder with a fully charged battery pack, the battery pack should be replaced with a new fully charged one.

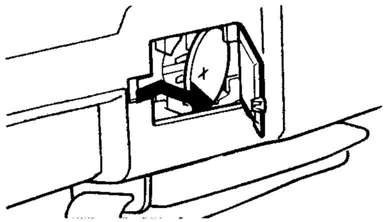
Temperature during charging
Lower temperature require a longer charging time. Charging under temperatures ranging from 10°C to 30°C is recommended.

1-6. SETTING THE DATE AND TIME

(D-1)



(D-2)



Inserting the Lithium Battery

(D-1)

This camcorder uses a lithium battery to activate the clock, and to keep a title and birthdays/ anniversary in memory. Before operating it for the first time, install the supplied lithium battery.

1 **Open the cover of the lithium battery compartment on the bottom of the camcorder.**

2 **Install the supplied CR2025 lithium battery with the + side facing out.**

3 **Close the cover.**

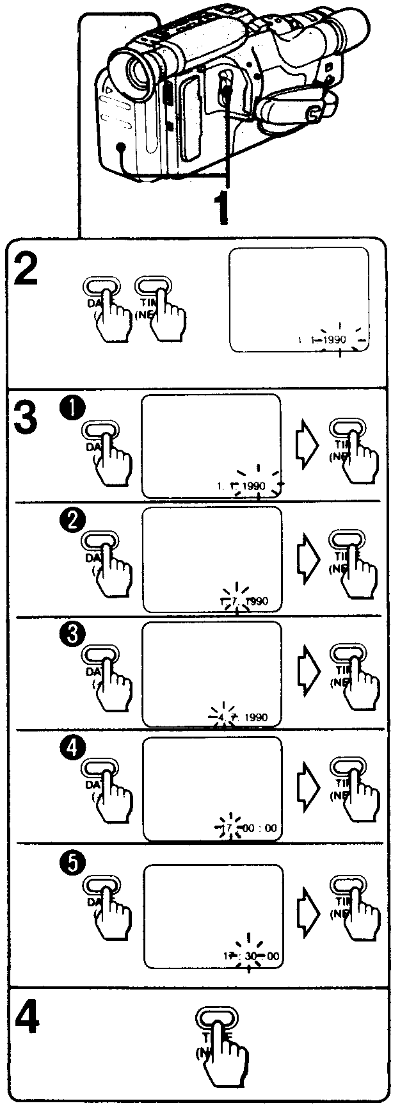
To remove the lithium battery (D-2)
Press the side of the battery in the direction as indicated for installation.

Note on lithium battery life
The battery will last for approximately 1 year in normal operation.
When the lithium battery becomes weak, the time indication will blink in the viewfinder screen for about 5 seconds (when POWER is set to CAMERA). In this case, **replace the battery with a Sony CR2025 or a battery with one of the same type and rating.** After replacing the battery, readjust the date, time, title, birthdays, and anniversary. (If the battery is replaced while the battery pack is attached, the readjustments are not necessary.)

Cautions

- Keep the lithium battery out of the reach of children. Should the battery be swallowed, immediately consult a doctor.
- Wipe the battery with a dry cloth to assure a good contact.
- Be sure to observe the correct polarity when installing the battery.
- Do not hold the battery with metallic tweezers, otherwise a short-circuit may occur.

(D-3)



Setting the Date and Time

(D-3)

1 **Make sure that a power source is connected, set POWER to CAMERA, and slide STANDBY up.**

2 **Press DATE (+) and TIME (NEXT) simultaneously for more than 3 seconds until the date indication blinks in the viewfinder screen.**
DATE now functions as + (to advance numbers) and TIME functions as NEXT (to execute).
If you missed the number you wanted, keep + pressed. The digit will return to the original one.

3 **Adjust the year, month, day, hour, and minute, in that order.**
First adjust the blinking digits with +, and then press NEXT.

4 **Press NEXT to set the second to "00".**
The clock starts operating.

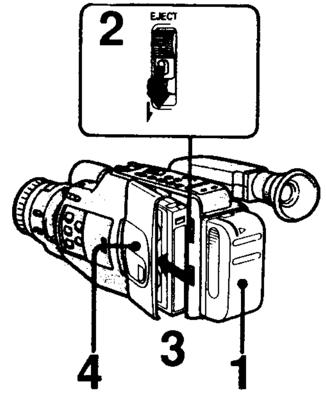
To correct date and time setting
Repeat steps 2 to 4.

To advance the digits faster
Keep + pressed.

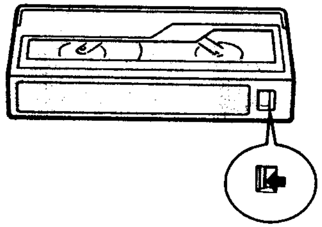
To check the preset date and time
Press DATE or TIME. When you press the same button again, the indication goes off.

1-7. INSERTING TAPES

(E-1)



(E-2)



(E-1)

1 **Make sure a power source is connected.**

2 **While pressing the small button, slide EJECT.**
The cassette holder will automatically open. Do not pull the cassette holder forcibly when it is moving.

3 **Insert a tape with the window facing outside.**

4 **Press the PUSH mark to close the cassette holder.**

Ejecting the Tape

1 Make sure that a power source is connected.
2 While pressing the small button, slide EJECT.
3 The cassette holder will automatically open.
4 Take out the tape and press the PUSH mark to close the cassette holder.

Preventing Accidental Erasure

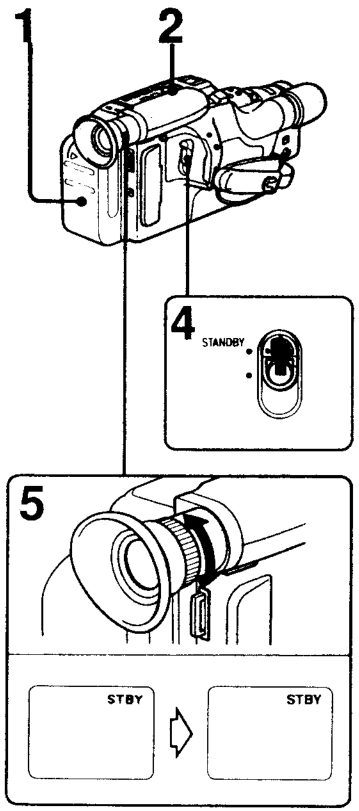
(E-2)
Slide in the red tab on the cassette to prevent recording.
To re-record on this tape, slide the tab back out.

Notes on handling tapes

- Never insert anything in the small holes on the rear of the cassette. These holes are used to sense the type and thickness of the tape, or if the tab is out or in, etc.
- Store tapes in their cases and keep them in an upright position to prevent intrusion of dust and uneven winding.

1-8. ADJUSTING THE VIEWFINDER LENS

(F)



The position of the viewfinder lens for optimum vision varies depending on the person. Adjust it when using the camcorder for the first time, or when using it after someone else. **(F)**

1 **Make sure a power is connected.**

2 **While pressing the green button, set POWER to CAMERA.**

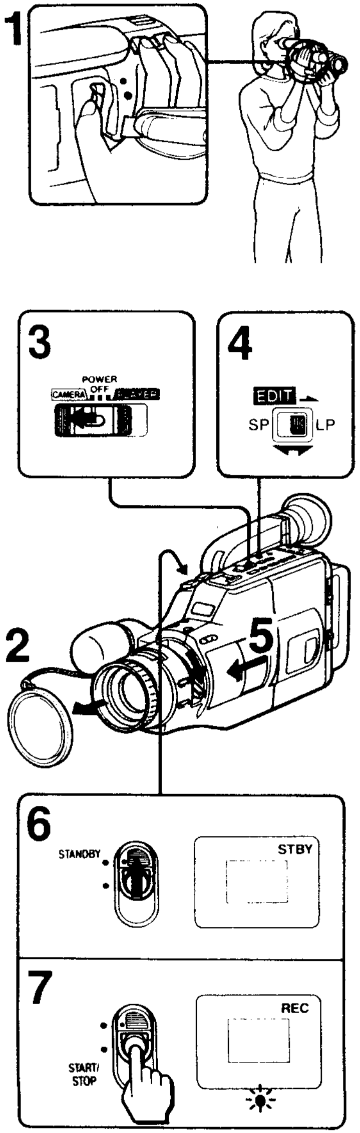
3 **Insert a tape. (page 20)**

4 **Slide STANDBY up.**

5 **Turn the viewfinder lens adjustment ring so that the "STBY" displayed in the viewfinder screen comes into sharp focus.**

1-9. RECORDING A PICTURE USING AUTOMATIC ADJUSTMENT

(G-1)



Make sure the preparations on page 11 are complete before recording.

Start Recording

(G-1)

Before recording "once-only" events, we strongly recommend making a trial recording and checking that everything is working perfectly.

1 **Hold the camcorder as in the figure.**
Put your hand through the grip strap and make sure that your thumb can easily touch START/STOP.

2 **Remove the lens cap. (page 11)**

3 **While pressing the green button, set POWER to CAMERA.**

4 **Set the REC MODE switch to LP (long play) or SP (standard play) according to the length of your planned recording.**

5 **Close the AUTO LOCK cover and turn the zoom lever downwards.**

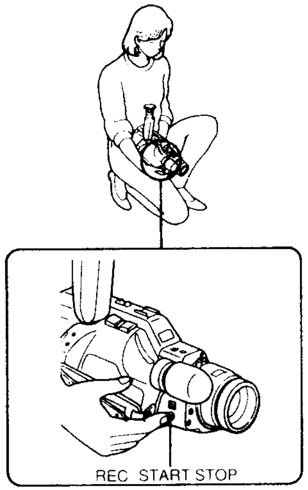
6 **Slide STANDBY up.**
"STBY" and the auto-focus frame appear in the viewfinder. The camcorder is now in the standby mode, and focus is adjusted automatically inside the frame (auto-focus adjusting range). Do not turn or stop the focus ring forcibly.

7 **Press START/STOP.**
"REC" appears and the red lamp lights up in the viewfinder. The camcorder is now recording.

To pause (To stop momentarily)
Press START/STOP again.
"STBY" appears in the viewfinder. The camcorder is in standby mode again.

To stop
Slide STANDBY down and set POWER to OFF.

(G-2)



For low-position shooting (G-2)
The viewfinder can be turned up 90 degrees.
Use the REC START/STOP button on the front right of the camcorder.
1 Press REC START/STOP to start recording.
2 Press it again to stop recording.

Notes on recording

- To record from the beginning of the tape, run the tape for about 15 seconds before recording. This will avoid missing the starting point when the tape is played back.
- If POWER is moved during recording, the tape will stop.
- When moving from indoors to outdoors, or vice versa slide STANDBY up and point the camcorder at a white object for about 15 seconds so that the white balance is properly adjusted.

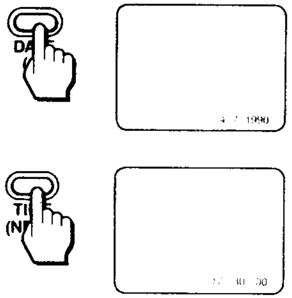
Note on standby mode
If you leave the camcorder in the standby mode for 5 minutes or more, the camcorder will be automatically turned off. To resume the standby mode, slide STANDBY down once and slide it up again. To start recording, press START/STOP directly.

Note on light sources
If you are shooting a subject under bright conditions just after shooting in a dark place, the picture may not appear in the viewfinder. In this case, point the camcorder to another direction.

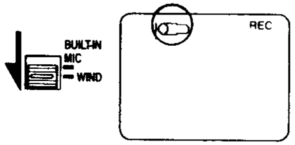
Recording mode
This camcorder records in the SP mode (approximately 20.051 mm/second) and in the LP mode (approximately 10.058 mm/second) and can play back in the SP mode and LP mode. The quality of the playback picture in the LP mode, however, will not as good as that in the SP mode.

Notes on PCM recording and playback
PCM recording or playback is not possible with this camcorder.
The PCM sound recorded or after-recorded with another video recorder cannot be played back with this camcorder.

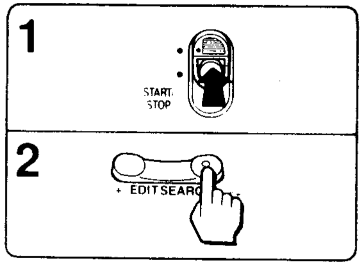
(G-3)



(G-4)



(G-5)



To Record Date and Time

(G-3)

Press DATE for the date indication or TIME for the time indication during camera recording or when in recording pause mode.
The date or time displayed in the viewfinder is recorded with the picture.

To stop recording date or time
Press DATE or TIME again.
The picture recording continues.

When There is a Strong Wind

(G-4)

Set BUILT-IN MIC to WIND.
The noise from the wind will reduced.
After recording, set it to the upper position (green mark).

To Check the Last Portion of the Previous Recording

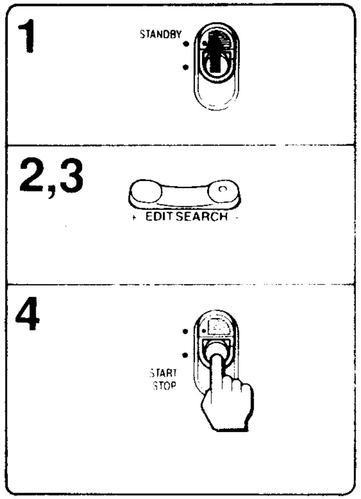
(G-5)

1 **Set the camcorder in the recording pause mode by pressing the START/STOP button.**

2 **Press ⊖ side of EDITSEARCH momentarily.**
The last few seconds of the recorded portion are rewound and then the recorded picture appears in the viewfinder. After a few seconds of playback, the camcorder goes back to recording pause mode.

If the picture has not been recorded
The video heads may be contaminated. Clean the heads using the Sony V8-25CLH video head cleaning cassette or equivalent.

(G-6)



To Re-record a Previously Recorded Portion

(G-6)

1 **Slide STANDBY up to set the camcorder to the standby mode.**

2 **Look in the viewfinder and find the point from where you want to begin the recording:**
Keep pressing the + side of EDITSEARCH to advance the picture at a normal playback speed, or the − side to reverse the picture.

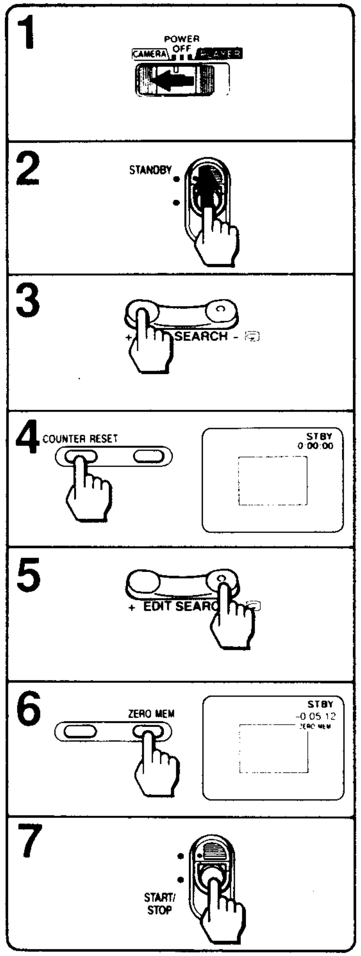
3 **At the desired point, release EDITSEARCH.**

4 **Press START/STOP to start recording.**

The picture is connected smoothly after the pre-recorded portion even if STANDBY is slid down and slid up, or even if the power is turned off and on again, provided that the tape is not removed.

To stop
Slide STANDBY down.

(G-7)


1
POWER
CAMERA OFF PLAYER
2
STANDBY
3
+ SEARCH -
4 COUNTER RESET
STBY
0 00:00
5
+ EDIT SEARCH
6
ZERO MEM
STBY
-0 05 12
ZERO MEM
7
START/
STOP

To Re-record a Picture in the Middle of a Recorded Tape (Insert Recording)

(G-7)

1 **While pressing the green button, set POWER to CAMERA.**

2 **Slide STANDBY up to set the camcorder to standby mode.**

3 **While looking in the viewfinder, keep pressing the + or – side of EDITSEARCH and release the button where you want to end the insertion.**
The camcorder is set to standby mode again.

4 **Press COUNTER RESET.**
The counter is reset to zero.

5 **While looking in the viewfinder, keep pressing the – side of EDITSEARCH and release the button at the point where you want to start the insertion.**

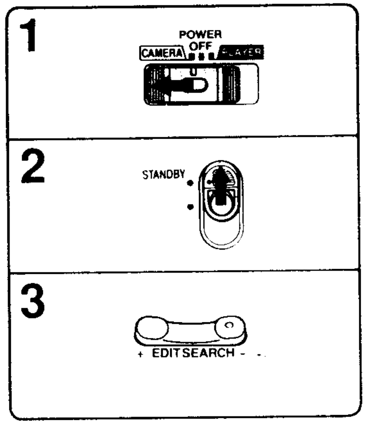
6 **Press ZERO MEM.**
The insert ending point is stored in memory.

7 **Press START/STOP.**
Insert recording begins, and stops automatically near the counter zero point.

To cancel the ZERO MEM
Press ZERO MEM.

Note
The picture may be distorted at the end of the inserted portion when it is played back.

(G-8)


1
POWER
CAMERA OFF PLAYER
2
STANDBY
3
+ EDITSEARCH -

Playing Back the Picture Instantly

(G-8)
You can check the recorded picture in the viewfinder. Sound is not heard.

1 **While pressing the green button, set POWER to CAMERA.**

2 **Slide STANDBY up.**

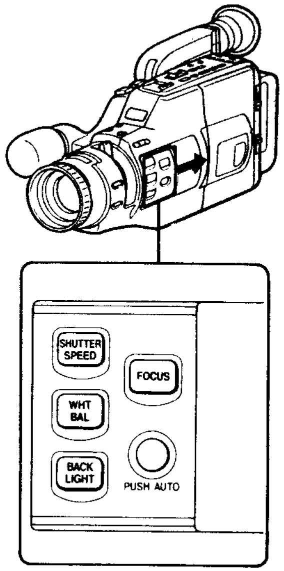
3 **Keep pressing the + or – side of EDIT-SEARCH to play back the picture.**
+ side: to view the playback picture
– side: to view the playback picture in reverse

To stop playback
Release EDITSEARCH.

To monitor the sound while viewing the playback picture in the viewfinder
Connect an earphone to the 🎧 jack.
1 While pressing the green button, set POWER to PLAYER.
2 Press ◀◀ to rewind the tape and press □ where you want to stop.
3 Press ▷ to start playback.

1-10. SELECTING THE AUTOMATIC/MANUAL ADJUSTMENT

(H-1)



When you close the AUTO LOCK cover, the focus, white balance, and exposure (back light) are adjusted automatically, and the shutter speed is set to 1/50.
The automatic function offers you worry-free operation under most shooting conditions. But under certain circumstances, manual adjustment is better for effective recording. For manual adjustment, open the AUTO LOCK cover and select an appropriate setting.

Looking Over Each Button

(H-1)

FOCUS:
Press to set the camcorder in the manual focusing mode.
Once the focus is adjusted, the setting is locked. (See page 29.)

PUSH AUTO:
Keep pressing to achieve autofocusing temporarily in the manual focusing mode.
(See page 30.)

WHT BAL:
Press to lock the white balance in the ☼ (outdoors), ✧ (indoors), or HOLD mode. The tone of colors is fixed regardless of the lighting condition. (See page 31.)

SHUTTER SPEED:
Press to increase the shutter speed to record a fast-moving subject, such as golf or tennis swing, clearly. (See page 33.)

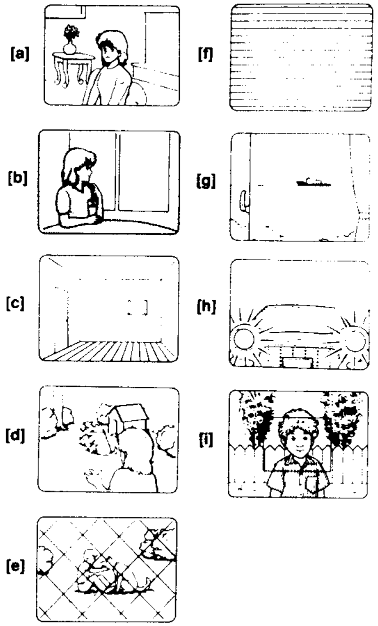
BACK LIGHT:
Press when a subject appears dark against a bright background. (See page 34.)

Even if you open the AUTO LOCK cover
The setting of each function is the same as the automatic adjustment until you change it.

Notes
- Even when you set POWER to OFF, previous settings are retained. They are cancelled if the power source is disconnected for more than 5 minutes.
- If you close the AUTO LOCK cover after you have made manual adjustment and then open it again, the previous settings for manual adjustment will be recalled.

1-11. MANUAL FOCUSING

(I-1)



When you close the AUTO LOCK cover, the *autofocusing functions and you can easily get a* focused picture under most shooting conditions. But manual focusing is recommended in the following cases.
[a] to [j] correspond to the illustrations. **(I-1)**

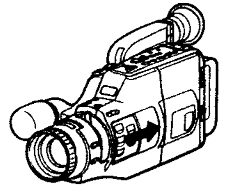
[a] Insufficient light
[b] Too much brightness behind the subject
[c] Subjects with little contrast -- wall, sky, etc
[d] One subject is close; the other is in the center, but at a distance
[e] Subjects beyond nets, etc., or another subject passes in front of the camcorder
[f] Horizontal stripes
[g] Subject through frosted glass
[h] Bright subject or subject reflecting light
[i] High contrast behind the subject (The background may be focused.)
[j] Under the following circumstances
- When using conversion lenses or effect filters
- When shooting a stationary subject using a tripod
- To save battery wear

Autofocusing does not function momentarily when:
- The setting of the shutter speed is changed.
- Back light is adjusted manually.
- Lighting conditions change quickly.
- Zooming is done from wide-range to telephoto.

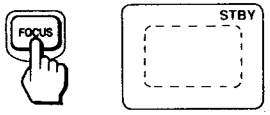
This camcorder keeps in focus by referring to the picture contrast, which is weak in the above situations.

(I-2)

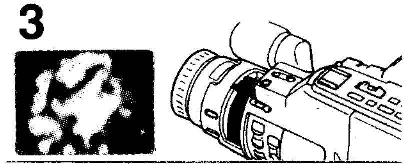
1



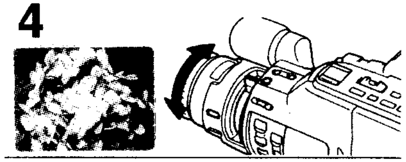
2



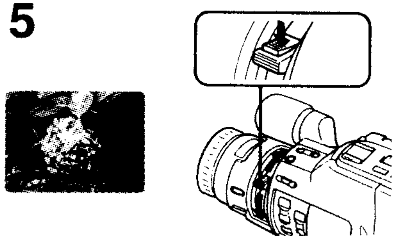
3



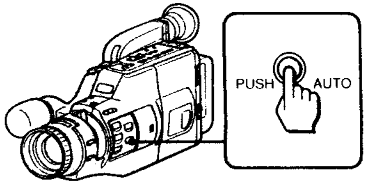
4



5



(I-3)



Focusing Manually

(I-2)

1 **Slide open the AUTO LOCK cover.**

2 **Press FOCUS.**
Make sure that the autofocus frame goes off in the viewfinder.

3 **Turn the manual zoom lever fully to the telephoto position.**

4 **Turn the focus ring to achieve sharp focus.**

5 **Set the desired shot length using the manual zoom lever while pressing the button on it.**

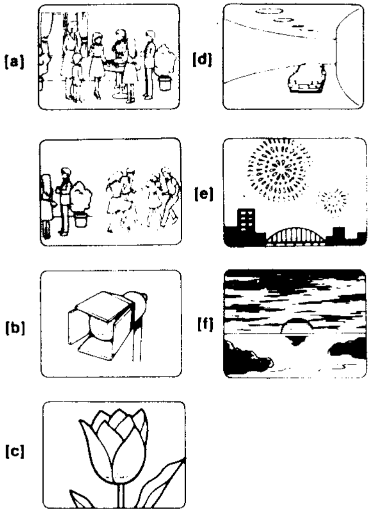
Shooting with autofocusing momentarily (I-3)
While shooting with manual focusing, press PUSH AUTO.
The autofocus functions **while you are pressing the button.** When you release the button, manual focusing will be resumed. Use this button when you change the focus from one subject to another. The focusing performs naturally.
The previous settings of the shutter speed, white balance, and back light are retained.

Some helpful hints

- When shooting in relatively dark places such as indoors, the depth of field in proper focus is very shallow. For best results, shoot at wide angles after focusing in telephoto.
- When shooting a scene with lots of movement in bright light, set the zoom lever to the wide-angle position and the focus ring to 2 m.

1-12. ADJUSTING THE WHITE BALANCE

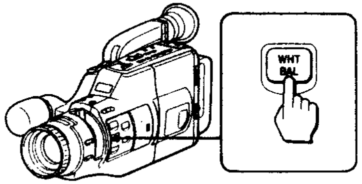
(J-1)



When you close the AUTO LOCK cover, the auto white balance function of this camcorder adjusts the picture to natural colours under most shooting conditions. However, in the conditions listed below, adjust the white balance manually.
[a] to [f] correspond to the illustrations. **(J-1)**

	Conditions	**Indication in the viewfinder**
[a]	Lighting conditions change quickly	💡
[b]	Too bright, such as in photograph studios	
[c]	Monochromatic subject or background	HOLD
[d]	Under a sodium lamp	💡
	Under a mercury lamp	
	Under a color matching fluorescent lamp	•
[e]	Recording outdoors: a night view, neon signs, or fireworks	
[f]	Recording outdoors: scenes after sunset or before sunrise	

(J-2)



Adjusting the White Balance Manually

(J-2)

1 **Slide open the AUTO LOCK cover.**

2 **Select the desired white balance mode by pressing WHT BAL.**
Each time you press the button, the indication changes as follows.

No indication (auto) → HOLD → • → 💡

Note on manual adjustment
When moving from indoors to outdoors, or vice versa, close the AUTO LOCK cover and open it again.

What is the HOLD mode?
In the HOLD mode, the camcorder automatically adjusts to the colour temperature of the subject's light source and keeps that temperature during recording. When recording some subjects with different colour temperatures, use the HOLD mode to set a colour temperature. You can achieve a recording with natural colours without being affected by the surroundings.

To set into the HOLD mode

1. Close the AUTO LOCK cover.
   The white balance will be set to the automatic mode.
2. Point at and record a white, flat object such as a white wall or paper.
3. Press WHT BAL to display the HOLD mark in the viewfinder.

When you change the battery pack or when the light source is changed, follow this procedure again.

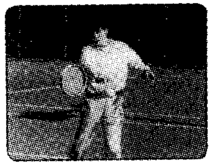
Colour Temperature and White Balance

The colour temperature indicates a property of light and is measured in K (Kelvin). It increases as the light source gets bluer and decreases as the light source gets redder. It has no direct relationship with brightness. The camcorder automatically adjusts the white balance within the range shown below.

Colour temperature (K)		Light source
↑	10,000	Clear
	8,000	
Blue		Slightly overcast
	7,000	Cloudy, rainy
	6,000	**Fluorescent lamp (daylight)**
	5.000	
White		**Direct sunlight**
		Fluorescent lamp (daylight)
	4,000	**1 hr. after/before sunrise/sunset**
	3,500	↑ **Fluorescent lamp (off-white)**
		Studio lamp
		Halogen lamp
	3,200	
	3,000	
Yellow		Tungsten lamp
	2,500	30 min. after/before sunrise/sunset
Red		↓
	2,000	Sunrise/sunset
↓		Candlelight

1-13. SETTING SHUTTER SPEED

(K-1)



When a fast-moving subject is recorded at normal *shutter speed, it may not be seen clearly when* played back in the pause mode (still picture). This can be improved by increasing the shutter speed. Six shutter speeds can be selected: 1/50 (normal speed), 1/120, 1/250, 1/1000, 1/2000, or 1/4000 of a second. **(K-1)**
When recording at a high-speed shutter setting, record in a brighter place than usual.

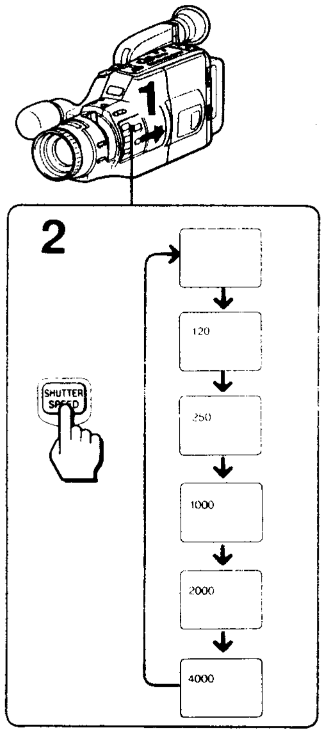
Also, the depth of field in proper focus becomes shallow at a higher shutter speed. This is effective to record the main subject in sharp focus and the surroundings out of focus.

Recommended setting for your situation
Choose an appropriate shutter speed according to the situation, referring to the chart below for examples.

Example use	**Recommended shutter speed**
• On clear days, recording golf or tennis swing (To view the hit ball clearly in the still picture mode, set to 1/4000) • Recording skiers	1/4000 or 1/2000
• On overcast days, recording a moving merry-go-round or roller coaster • Recording outdoors from inside a vehicle (for stable shooting)	1/1000 or 1/250
• Instead of the ND2 filter (To reduce the exposure level to about a half) • Recording indoor sports (for stable shooting)	1/120

When playing back the picture recorded at certain speeds
Use 8 mm video equipment with the clean still function to obtain the noiseless still picture.

(K-2)



Selecting the Shutter Speed

(K-2)

1 Slide open the AUTO LOCK cover.

2 Press SHUTTER SPEED repeatedly until the desired shutter speed indication appears.
Each time you press the button, the indication changes as follows.

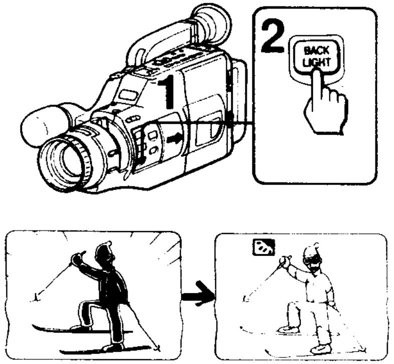
→ No indication (1/50) → 120 (1/120) → 250 (1/250) →
→ 4000 (1/4000) ← 2000 (1/2000) ← 1000 (1/1000) ←

Notes

- When you select shutter speed 1/250 or faster record under sunlight or use a video light.
- When you record a TV screen with certain shutter speeds, the brightness of the recorded picture may vary.
- When you shoot a very bright subject at a faster shutter speed, a light vertical, belt-like line (smear) may appear on the screen.
- When you record at certain shutter speeds under a light discharged tube, such as a fluorescent lamp, sodium lamp, or mercury lamp, the brightness of the recorded picture may vary (flicker).

1-14. SHOOTING WITH BACKLIGHTING

(L)



In this camcorder, the exposure is automatically controlled. However, when shooting a subject that is backlit, that is, if the light source is coming in from behind the subject, use the BACK LIGHT button. **(L)**

1 Slide open the AUTO LOCK cover.

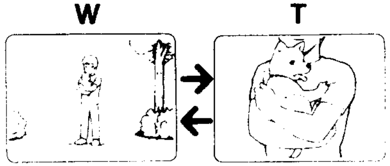
2 Press BACK LIGHT.
The ⧅ indication appears.

After shooting

Be sure to release this adjustment setting by pressing BACK LIGHT again. (The ⧅ indication goes out.)
Otherwise, the recorded picture will be too bright.

1-15. ZOOMING

(M-1)



The size of the subject in the screen can be changed. Use "zoom-in" for dramatic close-ups. Use "zoom-out" for panoramic long shots. Also use zooming to focus manually or to decide the shooting angle. **(M-1)**

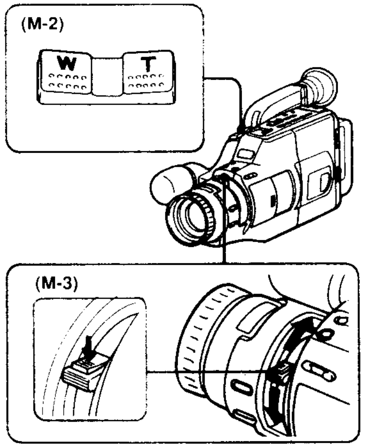
Power Zooming

— for smooth and constant zooming (M-2)
Press the T side of the power zoom button for telephoto (subject appears closer) and the W side for wide-angle (subject appears farther away).

Zooming Manually

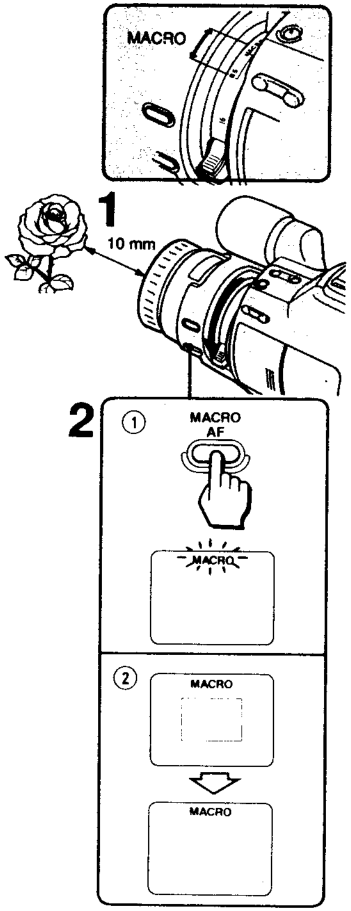
— for creating a dramatic effect (M-3)
Turn the manual zoom lever upward for telephoto and downward for wide-angle.
Be sure to keep pressing the button on the lever when turning it downward.

Focal length of this camcorder
The focal length is 8.5 mm to 68 mm. This means approximately 45 mm to 363 mm converted into the focal length of a 35-mm camera.

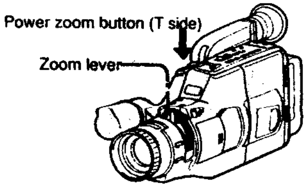


1-16. CLOSE-UP(AUTO-FOCUSING IN MACRO)

(N-1)



(N-2)



Even tiny subjects, such as flowers, insects, photographs, can literally fill the screen with auto-focusing in macro.
This is useful also when storing a title (page 39).
(N-1)

1. **Bring the camcorder as close as necessary to obtain the desired subject size.**
   The subject can be as close as a minimum of 10 mm from the lens surface.

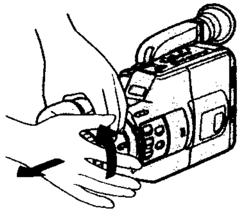
2. **Press MACRO AF.**
   ① The zoom lever turns automatically to the MACRO range.
   The MACRO indication blinks in the viewfinder and lights steadily when the zoom lever enters the MACRO range.
   ② The autofocus frame appears in the viewfinder and the focus is adjusted automatically.
   The frame disappears when sharp focus is achieved.

To release this adjustment setting
Press the T side of the power zoom button or turn the zoom lever, to return the lever to the ordinary range.
(N-2)

If the autofocus frame disappears before focusing sharply
The autofocus frame disappears if sharp focus cannot be achieved within 30 seconds. In this case, press MACRO AF again to re-function autofocusing in macro.
If you still do not get a sharp focus, manual focusing is recommended (page 37). Adjust it after the autofocus frame goes out.

To keep autofocus functioning
Keep MACRO AF pressed.
Contrary to the ordinary auto-focusing (page 22), autofocusing in macro is released each time the sharp focus is achieved.

(N-3)



Notes
- This function has no connection with the AUTO LOCK cover. You can use autofocusing in macro while manually adjusting the ordinary focus, etc.
- Do not press the power zoom button while the zoom lever is moving for autofocusing in macro. Otherwise, autofocusing is released.

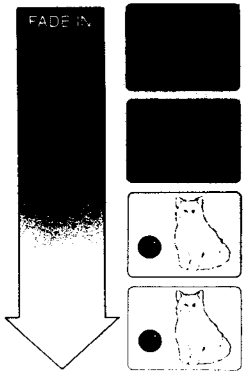
Manual focusing in macro
1. Turn the zoom lever to the MACRO range without pressing the button on it.
   The MACRO indication lights up in the viewfinder.
2. Turn the zoom lever within the MACRO range to focus sharply.

If the lens hood touches the subject
Remove the lens hood. Hold the focus ring and turn the hood by pressing it with your palm. **(N-3)**
Do the same when attaching/removing a filter or conversion lens (not supplied).

Recommended accessory
When shooting in macro, the depth of field is very shallow, so pay attention to focusing. To keep the subject in focus, use a tripod.

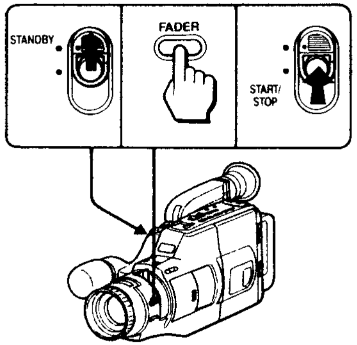
1-17. FADE-IN AND FADE-OUT

(O-1)

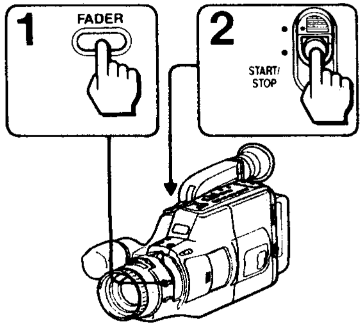


(O-2)

(O-3)



(O-4)



When fading-in, the picture will gradually appear from a black screen. The sound will also gradually increase. **(O-1)**
When fading-out, the picture will gradually disappear to a black screen. The sound will also gradually decrease. **(O-2)**
This function will give your recording a professional appearance.

To Fade-in

(O-3)

1 **Slide STANDBY up to set the camcorder in the standby mode.**

2 **Press FADER.**

3 **Press START/STOP.**
Fade-in is performed and then recording will start.

To Fade-out

(O-4)

1 **While recording, press FADER.**

2 **Press START/STOP to stop the recording.**
Fade-out is performed and then recording stops.

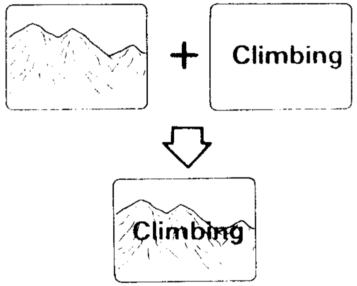
To cancel the fade-in/fade-out function before it is performed
Press FADER again before pressing START/STOP.

If you want to use the fade-in/fade-out function repeatedly
Start from step 1 each time.

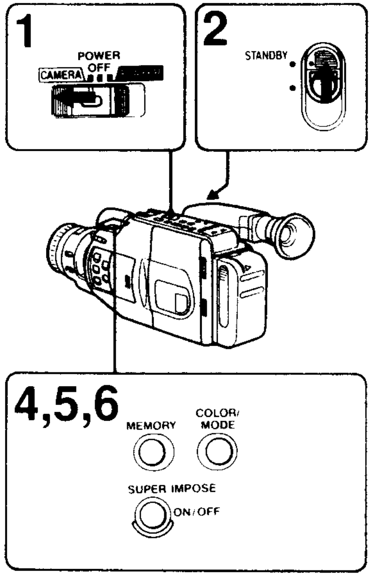
When the title (page 40), date/time (page 24), or age (page 45) is displayed
The title, date/time, or age does not fade-in or fade-out.

1-18. RECORDING A TITLE

(P-1)



(P-2)



You can superimpose your own hand-lettered message or illustration over the picture during recording or playback (editing). **(P-1)**

- One title can be stored
- The colour of the title can be selected from 8 colours.

Before recording, store a message or an illustration in the camcorder.

Storing a Title (P-2)

Before storing

- Make a desired title card.
  Use a plain, white card and draw a title with a dark colour in thick letters.
- Install the lithium battery (page 18)

Operation

1 **While pressing the green button, set POWER to CAMERA.**

2 **Slide STANDBY up to set the camcorder in the standby mode.**

3 **Point the camcorder to the title card and adjust the focus.**
To focus the subject, use the autofocusing in macro function. (page 36)

4 **Press MEMORY to store the title.**

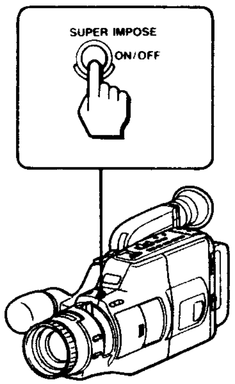
5 **Press COLOR/MODE and select the title colour.**
Each time you press the button. the indicaiton changes as follows.
WHT(white) → BLUE → GRN(green) → CYAN → RED
BLK(black) ← YEL(yellow) ← VIO(violet) ←

6 **Press ON/OFF to turn off the title.**
The title is stored in memory until you change it.

To check the title
Press ON/OFF in the standby mode.
To turn off the title, press the button again.

About memory back up
The camcorder uses the lithium battery on the bottom to keep the title in memory. On lithium battery life, see page 18.

(P-3)



Superimposing the Title on a Picture

(P-3)

1 During playback or recording, press ON/OFF at the point from which you want to insert the title.
The title is displayed. During recording, the title is recorded.

2 Wait for a while and press ON/OFF.
The title goes out.

When recording the title at the beginning
We recommend the following method:

1 Set the camcorder in the standby mode before step 1 above.
2 Release the standby mode after displaying the title, then go to step 2 above.

If you want to record the title during playback
Make connections for editing and record the title on another VTR. (See page 53.)
The title cannot be recorded on this camcorder during playback.

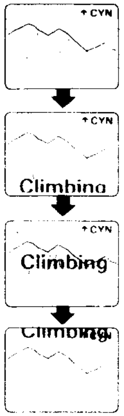
About the colour indication

- The colour indication in the viewfinder is not recorded.
- You can change the title color by pressing COLOR MODE even after displaying the title.

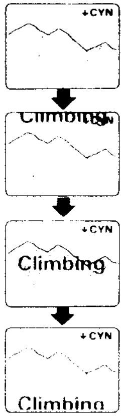
When displaying the title in the recording mode
The title goes out if you press EDITSEARCH.

When displaying the title in the playback mode
The title goes out if you press ◀◀ or ▶▶, and appears again when normal playback resumes.

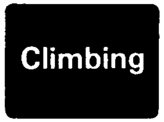
(P-4)



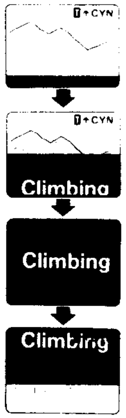
(P-5)



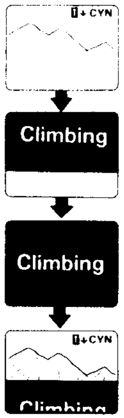
(P-6)



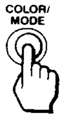
(P-7)



(P-8)



(P-9)



Various Display Modes of the Title

Display mode	Indication in the viewfinder
Scrolling up the title (P-4) The title scrolls up and stops at the center.	↑
Scrolling down the title (P-5) The title scrolls down and stops at the center.	↓
Reversing the title with the picture (P-6)	▯
Scrolling up the reversed title (P-7)	▯↑
Scrolling down the reversed title (P-8)	▯↓
Normal display mode	No indication

Selecting the display mode
Before displaying the title, press COLOR/MODE until the indication of the mode you want appears (P-9)

After selecting the mode, follow the procedure on page 40 to superimpose the title on the picture in that mode.

Note on scrolling
You can scroll the title only when the camcorder is in the recording standby, recording, or normal playback mode In the other modes (see "Various Playback Modes" on page 50), you can select only reversing (▯) or normal display mode. Also, scrolling will be cancelled when you set the camcorder in the still picture, slow playback, or double speed playback mode after selecting scrolling.

(P-10)

Function of the COLOR/MODE button
This button has a double function: one is to select the title colour and the other is to select the title display mode.
Its function depends on if the title is displayed or not.
(P-10)

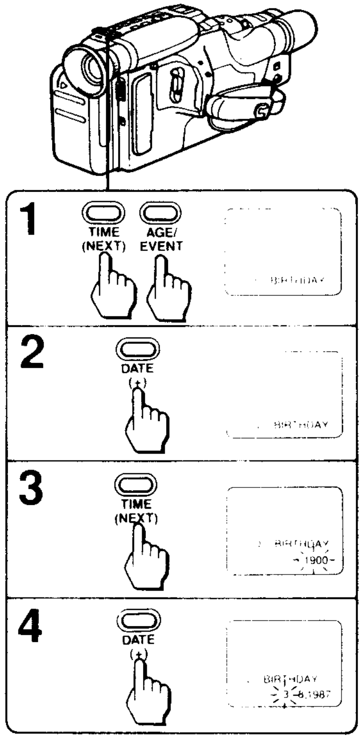
To select the colour
1 Press ON/OFF to display the title.
2 Press COLOR/MODE.
Each time you press the button, the colour indication changes as follows.
WHT(white) → BLUE → GRN(green) → CYAN → RED
└─BLK(black) ← YEL(yellow) ← VIO(violet) ←

To select the mode
1 If the title is displayed, press ON/OFF so that the title disappears.
2 Press COLOR/MODE.
Each time you press the button, the mode indication changes as follows.
No indication (normal mode) → ↑
↑ ▯↓ ← ▯↑ ← ▯ ← ↓ ←

↑:	Title scroll up mode
↓:	Title scroll down mode
▯:	Title reverse mode
▯↑:	Title reverse and scroll up mode
▯↓:	Title reverse and scroll down mode

1-19. RECORDING THE AGE OF YOUR CHILD

(Q-1)



You can record the age (in years and months) of your child, by presetting his/her birth date.
Besides age, you can also preset the date of a specific event, and record how many years and months have passed since then.
You can record up to 3 age or event.

Presetting the Birth Date/Event Date

Preparations
1 Connect the power source.
2 Set POWER to CAMERA while pressing the green button and slide STANDBY up.
You can see the display in the viewfinder.

Make sure that the date and time are set correctly. (page 19)
Otherwise, the birth date/event date cannot be preset correctly.

Operation (Q-1)
Example: Preset "3.8.1987" as the birth date of the second person.

1 **Press AGE/EVENT and TIME (NEXT) simultaneously for more than 3 seconds until the "$\boxed{1}$ BIRTHDAY" indication appears and $\boxed{1}$ blinks in the viewfinder.**

2 **Press DATE (+) to select $\boxed{2}$.**
Each time you press DATE (+), the display changes as follows:
$\boxed{1}$ BIRTHDAY → $\boxed{2}$ BIRTHDAY
└─ $\boxed{3}$ EVENT ←──┘
Although "EVENT" is displayed on $\boxed{3}$, you can use it for age as well. $\boxed{1}$ and $\boxed{2}$ can also be used for event.

3 **Press TIME (NEXT).**
"-.-.- 1900" is displayed.

4 **Adjust the year, month, and day.**
First adjust the blinking digits with DATE (+), and then press TIME (NEXT).
The age is displayed when all the items are adjusted.

If you missed the desired number with DATE (+)

Keep pressing DATE (+). The number changes as follows:

year: 1900 → 1901
↑ ↓
current ← current
year – 99 year

month: 1 → 2
↑ ↓
-- ← 12

day: 1 → 2
↑ ↓
-- ← 31

To correct/change the setting

Follow the procedure from step 1 again.

To advance the digits faster

Keep DATE (+) pressed.

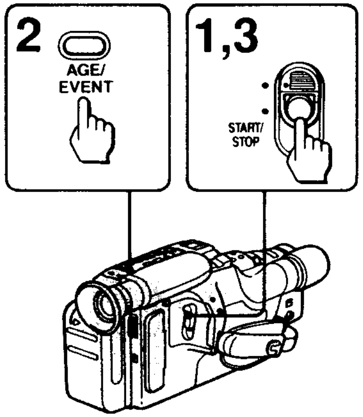
To preset the year before 1900

1 After step 3 on page 43, keep pressing DATE (+) until the current year is displayed.
2 Press DATE (+) again.
The year goes back 99 years.
(example: 1990 → 1891)
3 Go to step 4.

When in 2000

"---.-- 1901" is displayed in step 3 on page 43. After that, it advances every year as "1902, 1903, ...".

(Q-2)



Recording the Age

(Q-2)

1 Press START/STOP at the point where you want to insert the age indication.
The camcorder is set in the standby mode.

2 Press AGE/EVENT to select the indication you want to record.
Each time you press AGE/EVENT, the indication changes as follows:

No indication → [1] The first age
↑ ↓
[3] Anniversary ← [2] The second age

An item with no presetting is skipped.

The [1], [2], or [3] indication goes out.

3 Press START/STOP.
Recording starts again.
The age displayed in the viewfinder is recorded with the picture.

To stop recording the age

Press AGE/EVENT until the indication goes out.

To change the display while recording

Press AGE/EVENT until the indication you want to record is displayed. Recording of the indication you selected starts when [1], [2], or [3] goes out.

To cancel the stored birth date/event date

1 Proceed step 1 and 2 of "Presetting the Birth Date/Event Date" and select the item you want to cancel.
2 Press TIME (NEXT) twice.
"Month" blinks.
3 Press DATE (+) to display "--.--"
4 Press TIME (NEXT).

The birth date/event date is deleted from the memory and is not displayed when you press AGE/EVENT.

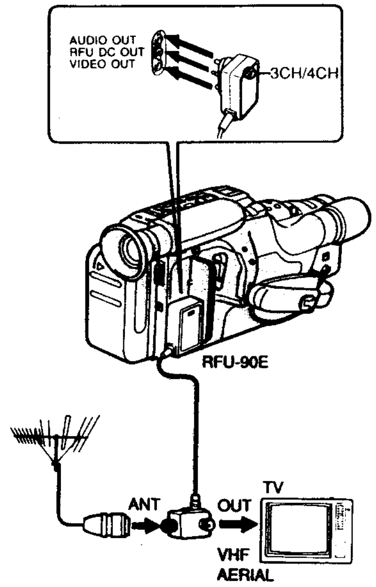
If you do not record the age while recording
You cannot add it later during playing back or editing. Be sure to follow the procedure "Recording the Age" while recording.

About memory back-up
The camcorder uses the lithium battery on the bottom to keep the birth date/event date in memory. On lithium battery life, see page 18.

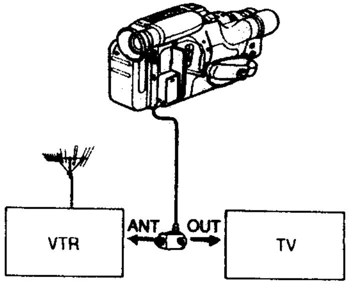
When you connect the camcorder to a TV
If you do not use the data-screen function, the age indication will appear on the TV screen when the [1], [2], or [3] indication goes out in the viewfinder and recording starts.

1-20. CONNECTIONS FOR PLAYBACK

(R-1)



(R-2)



To view the playback picture on the TV screen, the camcorder and the TV and/or VTR must be connected properly. Check the following connecting examples and go to the appropriate section to make the necessary connections.

Case 1
Connecting the camcorder directly to the TV without video/audio input jacks

Case 2
Connecting the camcorder directly to the TV with video/audio input jacks

Case 1: Connecting a TV without Video/Audio Input Jacks

For the customers supplied with the RFU-90E.

Step 1

Connecting an RFU adaptor and a TV **(R-1)**
- Use the supplied RFU adaptor.
- Usually keep the RFU adaptor and the TV connected.

Step 2

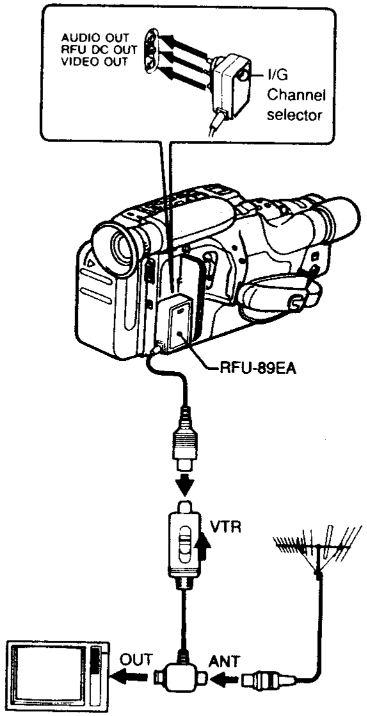
Adjusting the TV
Adjust one of the TV programme position so that you can receive the camcorder's playback signal.

1. **Select the RF unit selector on the adaptor to 3CH or 4CH, whichever is not active in your area.**
2. **Turn on the TV and select the O position.**
3. **Turn the TV so that you can get picture and sound from the camcorder.**

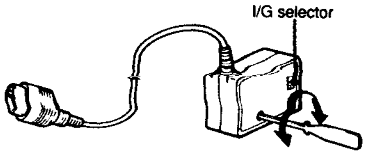
Note
When you watch a TV programme, turn off the camcorder or disconnect the RFU adaptor from the camcorder.

If your TV is connected with a VTR
Disconnect the aerial connection for the TV and the VTR, and insert the RFU adaptor between them. **(R-2)**

(R-3)



(R-4)



For the customers supplied with the RFU-89EA

Step 1

Connecting an RFU adaptor and a TV **(R-3)**.

- Use the supplied RFU adaptor.
- Usually keep the RFU adaptor and the TV connected.
- Set the selector switch on the aerial selector to VTR.

Step 2

Adjusting the TV
Adjust one of the TV programme position so that you can receive the camcorder's playback signal.

1 **Turn on the TV and select a programme position that is not used to receive a TV station.**

2 **Set POWER of the camcorder to CAMERA and slide STANDBY up.**

3 **Set the I/G selector on the RFU adaptor according to the TV system of your country.**

4 **Tune the TV so that you can get picture and sound from the camcorder.**
(For details on the TV, refer to the instruction mamual of the TV.)

When the playback picture is not free from disturbance.

1 **Set the selector switch of the aerial selector to ANT.**

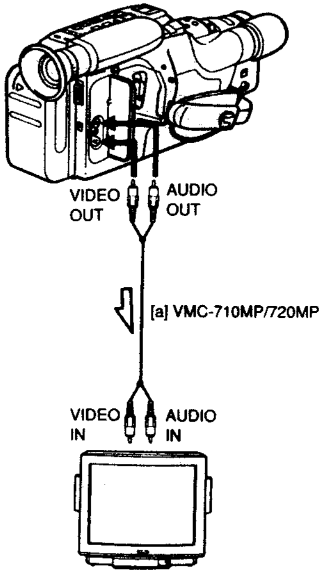
2 **Select a programme position on the between UHF channels 30 and 39, so that the TV shows no picture and a steady rusting sound or no sound is heard.**

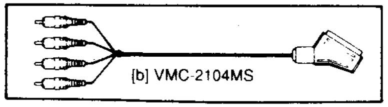
3 **Set the selector switch of the aerial selector to VTR.**

4 **Turn the RF channel setting screw of the RFU adaptor slowly with the supplied screwdriver so that playback picture is clearly displayed on the TV screen. (R-4)**

If your TV is connected with a TVR
Disconnect the aerial connection for the TV and the VTR, and insert the RFU adaptor between them.

(R-5)





Case 2: Connecting a TV Video/ Audio Input Jacks

(R-5)

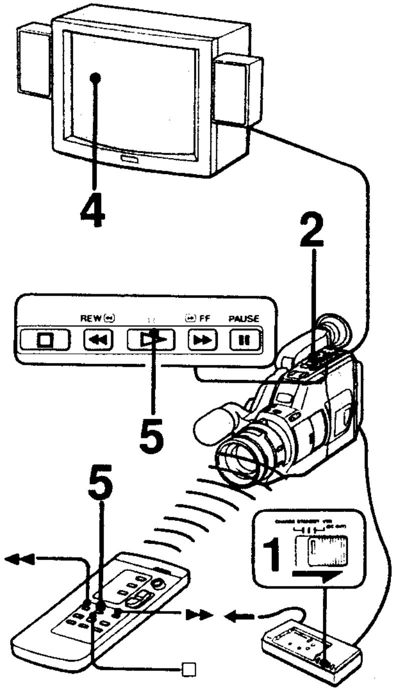
1 **Connect the camcorder to the TV.**
Use an appropriate connecting cable according to the connector type of your TV.
[a] VMC-710MP/720MP: to phono and BNC-type
If your TV has stereo type audio inputs, use VMC-910MS/920MS.
[b] VMC-2104MS: to 21-pin (EUROCONNECTOR)

2 **Set the TV/VIDEO selector on the TV to VIDEO.**

If your TV is connected with a VTR
Connect the camcorder to the VTR instead of the TV.

1-21. PLAYING BACK A TAPE

(S-1)



The supplied wireless Remote Commander is useful to control the camcorder from a distance. When using it, be sure to set the ■ switch to ON. (S-1)

Before you begin

When you keep the ṘFU adaptor connected to your TV, connect it also to the camcorder.

1 **When you use the AC power adaptor, set the CHARGE/VTR selector to VTR.**

2 **Set POWER to PLAYER while pressing the green button.**

3 **Insert a tape.**

4 **Turn on the TV (or the VTR).**
For a TV with video/audio input jacks:
Set the TV/VIDEO selector to VIDEO.
For a TV without video/audio input jacks:
Select the programme position for playing back the camcorder.

5 **Press ▷.**
Playback begins.
You can also use ▷ on the camcorder.

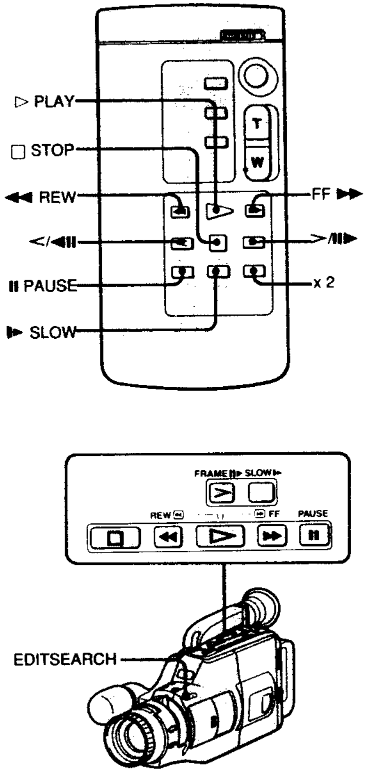
To stop playback, press □.
To rewind the tape, press ◀◀.
To advance the tape rapidly, press ▶▶.

To make the same indications in the viewfinder appear on the TV
Press DATA SCREEN.
To clear the indications, press DATA SCREEN again.

After playing back
Set the POWER switch on the camcorder and CHARGE/VTR selector on the AC power adaptor to STANDBY.

Notes
- When the still picture lasts for 5 minutes or more, the camcorder automatically enters the stop mode.
- Streaks will appear and the sound will be muted in the high-speed picture.

(S-2)



Various Playback Modes

(S-2)

To view the still picture (playback pause)
Press PAUSE II during playback.
II appears in the viewfinder.
To resume normal playback, press ▷ or II.

To change the playback direction
Press </◀II for the reverse or >/II▶ for the forward direction during playback. > on the camcorder is only for the forward direction.
◀ or ▶ appears in the viewfinder.

To view the picture at 1/5 speed (slow playback)
Select the playback direction with </◀II or >/II▶, and then press I▶ SLOW during playback. SLOW I▶ on the camcorder is only for the forward direction.
◀I or I▶ appears in the viewfinder.
When slow playback lasts for 1 minute or more, the forward or reverse playback at the normal speed starts automatically, depending on the tape direciton.
To resume normal playback, press ▷.

To view the picture at double speed*
Select the playback direction with </◀II or >/II▶, and then press x2 on the Commander. x2 or x2 appears in the viewfinder.
To resume normal playback, press ▷.

To view the picture frame-by-frame
In the still picture mode, press </◀II or >/II▶. Each time you press, the picture appears by a frame.
II▶ on the camcorder is only for the forward direction. ◀II or II▶ appears in the viewfinder.
If you keep pressing ◀II/II▶, playback at 1/30 speed starts.
To resume normal playback, press ▷.

To locate the desired scene
Keep pressing ◀◀ or ▶▶ during playback or in the still picture mode. ⊖ or ⊕ appears in the viewfinder. **To resume normal playback,** release the button.

To locate the desired scene quickly
Press ◀◀ during rewinding or ▶▶ during advancing the tape rapidly. ⊖ or ⊕ appears in the viewfinder.
To resume normal playback, press ▷.

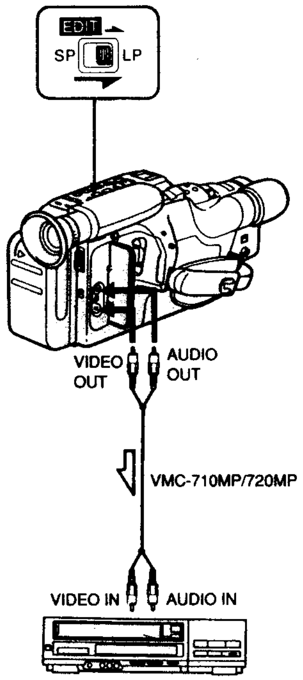
* Only on the Commander.

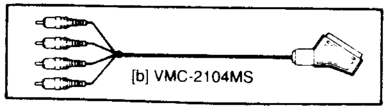
About the playback sound
In the various playback modes, streaks appear and the sound can be heard during playback at double speed in forward direction, but is little noisy.

If the still picture, frame-by-frame picture, or slow playback picture is noisy
Set the camcorder in slow playback mode, and press the + or – side of EDITSEARCH until the least noisy picture appears.

1-22. EDITING ONTO ANOTHER VTR

(T)





You can create your own video program by editing with any other 8, Hi8 or VHS format VTR. Also you can superimpose and record a title.

Before You Begin

- Make connections using an appropriate connecting cable according to the connector type of your VTR. (T)
  Sony offers you the following cables.
  [a] VMC-710MP/720MP: to phono and BNC type
  If your TV or VTR has stereo audio outputs,use VMC-910MS/920MS.
  [b] VMC-2104MS: to 21-pin (EUROCONNECTOR)
- Set the input selector of the VTR to LINE, if available.
- Set EDIT on the camcorder to the direction of the arrow.

Operation

1 **Insert a tape for recording into the recording VTR.**

2 **Set POWER of the camcorder to PLAYER and insert the recorded tape.**

3 **Playback the tape on the camcorder and locate the point where you want to start editing and set the camcorder to the playback pause mode.**

4 **On the recording VTR, locate the recording start point and set the VTR to the recording pause mode.**

5 **Press II of both units simultaneously to start editing.**

To stop editing momentarily, press II on the recording VTR.
To edit more scenes, repeat steps 3 to 5.
To stop editing, press □ on both units.

To record a title
You can superimpose and record a title on the picture while editing. For details, refer to page 39 to 42.

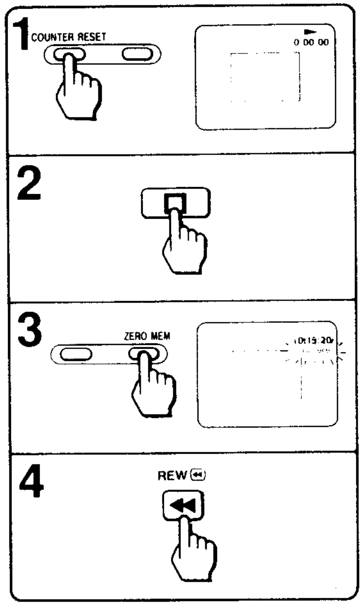
If you use the DATA SCREEN function
The indications displayed on the TV screen will also be recorded.

Use of the EDIT switch

When you set EDIT to the direction of the arrow (EDIT ON), the quality of the edited tape will have a certain extent of degration in picture and sound. Avoid using be sure to set this switch in the opposite direction of the arrow (EDIT OFF).

1-23. USING THE TAPE COUNTER

(U)



During recording or playback, the digits on the counter indicate the recording or playback time.

To Index the Whole Tape

Press COUNTER RESET at the beginning of the tape so that the counter shows "0:00:00". Write down the counter reading at a particular point so that you can easily find that point later by referring to the tape counter.

To Return to a Pre-Registered Point

(U)

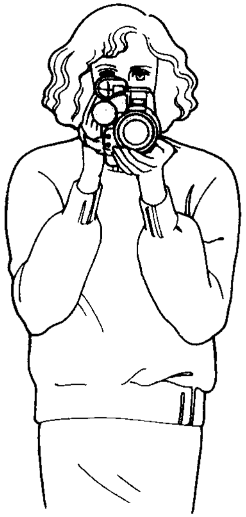
1. **During playback, press COUNTER RESET at the point you want to locate later.**
2. **Press when the playback is finished, as usual.**
3. **Press ZERO MEM.**
   The "ZERO MEM" indication blinks in the viewfinder.
4. **Press ◀◀ or ▶▶.**
   The tape rewinds or advances and stops automatically when the counter reaches approximately "0:00:00".

Notes on the tape counter and ZERO MEM button

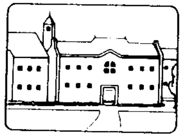
- The counter reading and the point of the tape may not correspond exactly. Use the counter as a guide. There will be a time lag of several seconds especially when you repeat fast-forward running, rewinding or when you play back a tape recorded in both LP and SP modes mixed.
- Be sure to press ZERO MEM after you stop the tape. It does not function during playback.
- The ZERO MEM mode is canceled automatically once the tape is rewound or sent forward to the point where you pre-registered.

1-24. HINTS FOR BETTER SHOOTING

(V-1)



(V-2)



Shooting Stable Pictures

Assume a good posture for shooting (V-1)
For hand-held shots, it is important to hold the camcorder properly.

- Hold the camcorder firmly and secure it with the grip strap so that you can easily manipulate the camcorder with your thumb.
- Place your left hand under the camcorder to support it. When adjusting the focus manually, make sure the camcorder does not move.
- Place your eye firmly against the viewfinder eyecup.
- Try to keep both eyes open.

Use a tripod
If you have a tripod for a still camera, it can also be used with the camcorder. If a tripod is not available, try placing the camcorder on a table top or any other flat surface of suitable height.

Keep the horizontal plane level (V-2)
The horizontal plane can be easily determined by using the viewfinder frame as a reference.

Planning Beforehand

If you are going to edit the tape after recording
Shoot the scene a little longer to make the editing easier.

If you are not going to edit the tape after recording
First record a title and then use the START/STOP button to make a smooth recording.

Lighting

Shoot with the sun behind you
When the light source is behind the subject, or in the following situations, the subject will be recorded too dark and the background too light.

- The subject is indoors and there is a window behind the subject.
- Bright sources such as fluorescent or incandescent lamps are included in the scene.
- You are shooting a person wearing white or shiny clothes in front of a white background. In this case, the face will be recorded too dark.

Use video lights in the dark
To get the best colors, a sufficient light level must be maintained. Photography lamps or halogen lamps are recommended. For best results, use of Sony video lights are recommended since their weight and low heat output levels allow safe direct connection to the camcorder.
Do not point the light at the camcorder. The high heat from the light can warp the casing of the camcorder.
And do not place your face or hair too close to the light during low-position shooting (page 23).
For detailed instructions on proper use of the light, read its instruction manual.

Brightness levels
Using the following chart as a reference, take a few minutes to familiarize yourself with brightness levels to improve your recording technique.

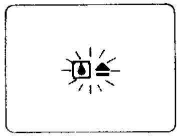
	Unit lux	
Snow-covered mountains Snow fields Sandy beach, clear day in summer		ND filter recommended
Clear day, mid-day (100,000 lux) Clear day, mid-afternoon (35,000) Overcast day, mid-day (32,000)	100,000	Normal recording
	10,000	
Overcast day, one hour after sunrise (2,000) Office lit by fluorescent lamps, near window (1,000) Clear day, one hour before sunset (1,000)	1,000	
Department store counter (500–700) Station wicket (650) Office lit by fluorescent lamps (400–500)	500	
Room lit by two 30 W fluorescent lamps (300) Subway station platform (300)	300	
Arcade at night (150–200)	200	
	100	
Theater lobby (15–35) Candle light (10–15)	10	Video light recom-mended

1-25. NOTES AND PRECAUTIONS

Notes on Moisture Condensation

If the camcorder is brought directly from a cold place to a warm place, moisture may condense inside the camcorder, on the surface of the tape, or on the lens. In this condition, the tape may stick to the head drum and be damaged or the unit may not operate correctly. To prevent possible damage under these circumstances, the camcorder is furnished with moisture sensors. However, take the following precautions.

(W-1)



If moisture condenses inside the unit

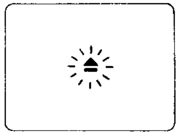
(W-1)

Moisture is present inside the camcorder when the ▣ and ⏏ indications in the viewfinder blink. In this case, no function except for tape ejection will work.

Eject the tape, turn off the camcorder, and leave it with the cassette holder open for at least 1 hour.

The camcorder can be used again if the ▣ and ⏏ indications do not appear when the power is turned on again. (⏏ indication appears only when a tape is insteaded.)

(W-2)



If moisture condenses on the surface of the tape

(W-2)

If moisture is present on the surface of the tape when the tape is inserted and a tape transport button (▷, ◀◀, etc.) is pressed, the ⏏ indication blinks inside the viewfinder.

In such case, no function except for tape ejection will work.

Eject the tape and let it sit for at least 1 hour.

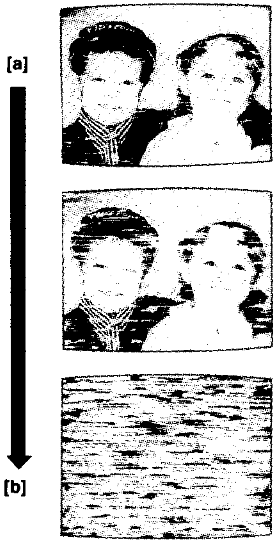
The tape can be used again if the ⏏ indication does not appear when the tape is inserted and a tape transport button is pressed.

If moisture condenses on the lens

No caution indications will appear, but the picture becomes dim.

Turn off the power and leave the camcorder unused for at least 1 hour.

(W-3)



Notes on Video Head Cleaning

To ensure clear picture, clean the video heads periodically.

When playback pictures are noisy or hardly visible, the video heads may be contaminated **(W-3)**

[a] Slight contamination

[b] Critical contamination

In such cases,

1 Clean the video heads with the Sony V8-25CLH cleaning cassette (not supplied), referring to its instructions.
2 After cleaning, check if the picture is clear by recording or playing back with an ordinary tape.
3 If the picture is still noisy, repeat cleaning. (Do not repeat cleaning more than 5 times.)

Caution

Do not use a commercially available wet-type cleaning cassette. It may damage the video heads.

Note

If the V8-25CLH cleaning cassette is not available in your area, consult your Sony service facility.

Precautions

On operation

- Operate the camcorder on 6.0 V (battery pack), 7.5 V (AC power adaptor), or 9.0 V (alkaline batteries).
- For DC or AC operation, use the accessories recommended in this manual.
- Should any solid object or liquid fall into the casing, unplug the camcorder and have it checked by qualified personnel before operating it any further.
- Do not hold the camcorder by the viewfinder or the microphone.
- Avoid rough handling or mechanical shock. Be particularly careful of the lens.
- Keep the lens cap on the lens when not using the camera.
- Do not wrap the camcorder and operate it because heat may build up internally.
- Keep the camcorder away from strong magnetic fields or mechanical vibration.
- Do not put the camcorder on the sand.

On care

- When the unit will not be used for a long time, disconnect the power source and remove the tape. Periodically turn on the power, operate the camera section and player section, and play back a tape for about 3 minutes.
- Clean the lens with a soft brush to remove dust. If there are fingerprints on it, wipe them off with a soft cloth.
  Clean the camcorder body with a dry, soft cloth, or a soft cloth lightly moistened with a mild detergent solution. Do not use any type of solvent which may damage the finish.

Note on copyright
Television programs, films, video tapes, and other materials may be copyrighted. Unauthorized recording of such materials may be contrary to the provision of the copyright laws.

1-26. USING YOUR CAMCORDER ABROAD

Each country has its own electricity system and TV color system. Before using your camcorder abroad, check the following points.

Power Sources

You can use your camcorder in any country with the supplied AC power adaptor within 110 V to 240 V AC, 50/60Hz.

Difference in Colour Systems

You can view the playback picture in the viewfinder. However, if you want to view the playback picture on a TV, it must be a PAL system-based TV. Check the following list. (in alphabetical order)

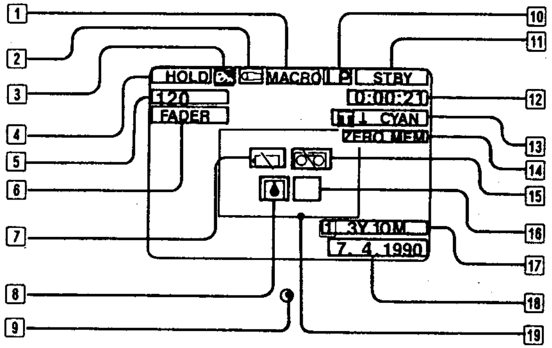
PAL system countries
Argentina, Australia, Austria, Belgium, Brazil, China, Denmark, Finland, Great Britain, Holland, Hong Kong, Italy, Kuwait, New Zealand, Norway, Paraguay, Portugal, Singapore, Spain, Sweden, Switzerland, Thailand, Urguay, West Germany, etc.

NTSC system countries
Bahama Islands, Bolivia, Canada, Central America, Chile, Colombia, Ecuador, Jamaica, Japan, Korea, Mexico, Peru, Surinam, Taiwan, The Philippines, U.S.A., Venezuela, etc.

SECAM system countries
Bulgaria, France, Guiana, Hungary, Iran, Iraq, Monaco, Poland, Soviet Union, etc.

1-27. INDICATIONS INSIDE THE VIEWFINDER

(X)



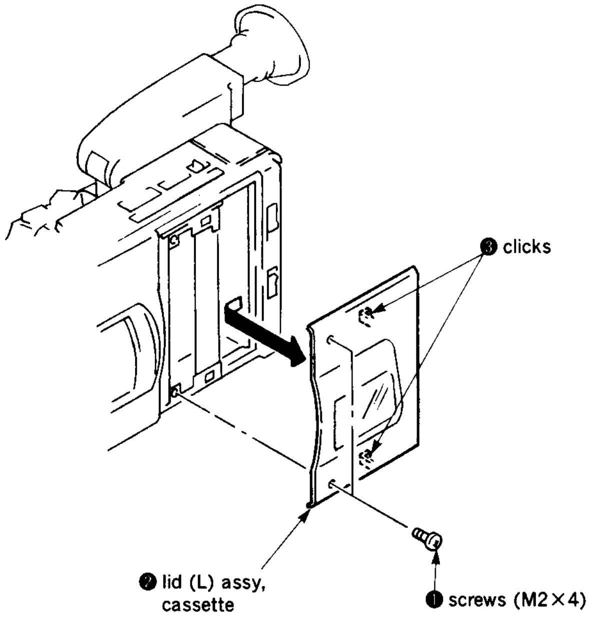
(X)

1. Auto-focusing in macro range
2. BUILT-IN MIC SELECT is set to WIND.
3. BACK LIGHT is pressed.
4. White balance mode (☀/💡/HOLD)
5. Shutter speed
6. FADER is pressed.
7. "Exchange battery." 🔋
8. Moisture has condensed. 💧
9. Shows up during recording.
   When blinking: "Exchange battery."
10. Playback mode (LP/SP)
11. Tape transport mode
12. Tape counter
13. Title mode
14. ZERO MEM is pressed.
15. "Exchange tape." 📼
16. "Clean video heads."/"Trouble occurred."
    (●, ⏏)
17. Age or anniversary
18. Date or time
19. Auto focus adjusting range
    Goes out during manual focusing

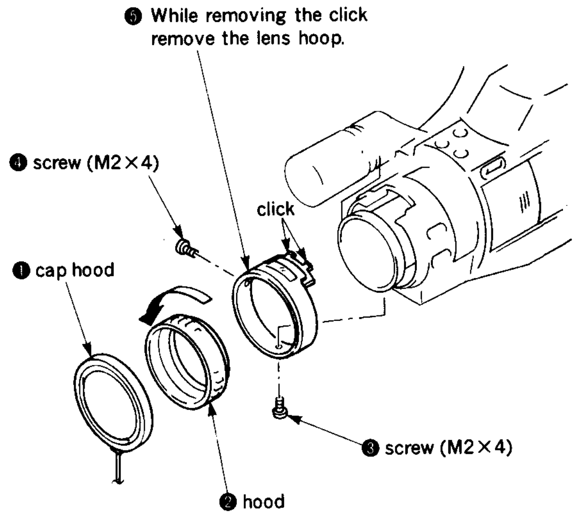
SECTION 2
DISASSEMBLY

2-1. REMOVAL OF CASSETTE LID ASSY

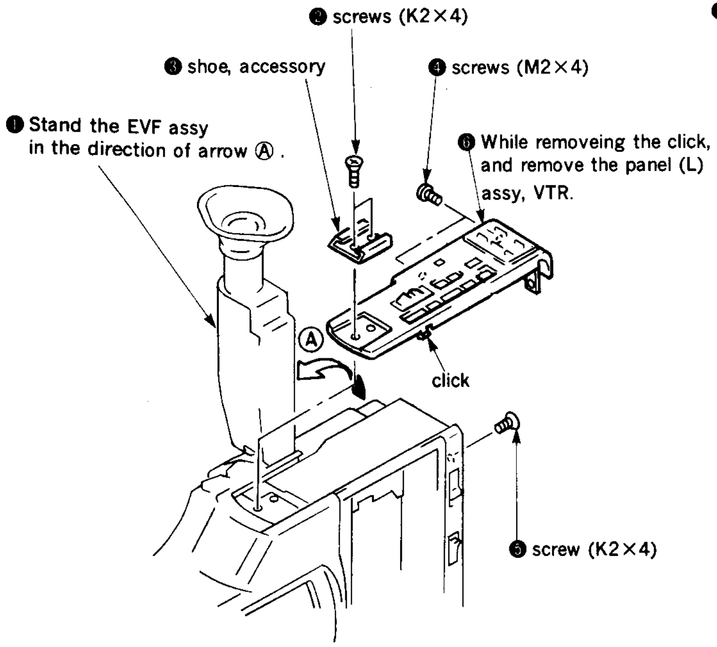
Note : When mounting, fit the click ❸ into holes completely, then clamp two screws ❶.


❸ clicks
❷ lid (L) assy, cassette
❶ screws (M2×4)

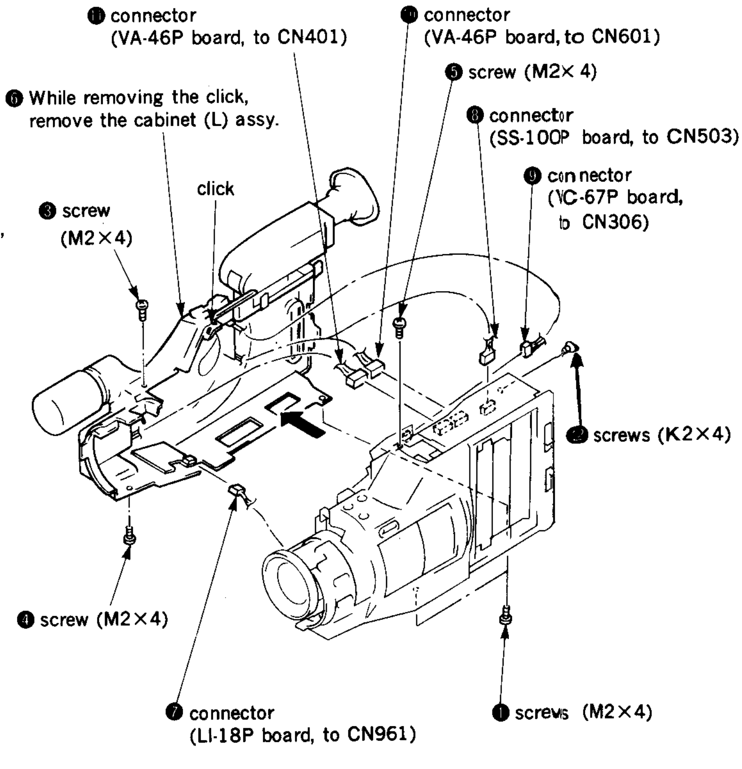
2-3. REMOVAL OF LENS HOOP


❺ While removing the click remove the lens hoop.
❹ screw (M2×4)
click
❶ cap hood
❸ screw (M2×4)
❷ hood

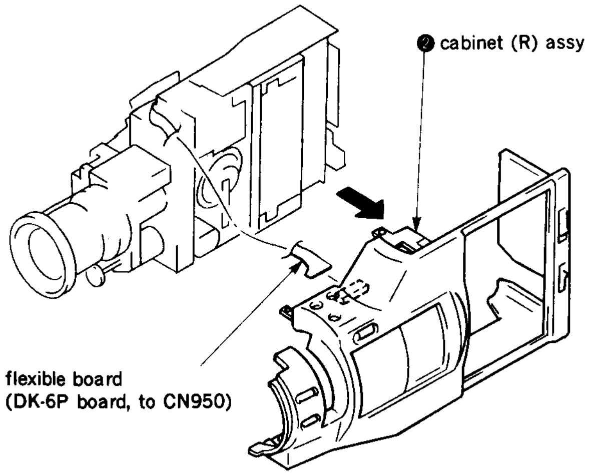
2-2. REMOVAL OF VTR PANEL (L) ASSY


❷ screws (K2×4)
❸ shoe, accessory
❹ screws (M2×4)
❶ Stand the EVF assy in the direction of arrow Ⓐ.
❻ While removeing the click, and remove the panel (L) assy, VTR.
Ⓐ
click
❺ screw (K2×4)

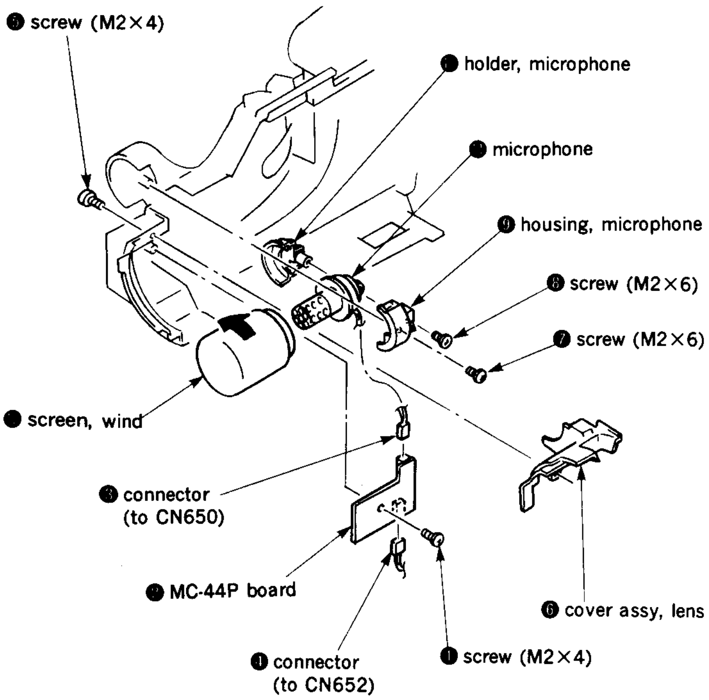
2-4. REMOVAL OF CABINET (L) ASSY


⓫ connector (VA-46P board, to CN401)
❿ connector (VA-46P board, to CN601)
❺ screw (M2×4)
❻ While removing the click, remove the cabinet (L) assy.
❽ connector (SS-100P board, to CN503)
❾ connector (VC-67P board, to CN306)
click
❸ screw (M2×4)
❷ screws (K2×4)
❹ screw (M2×4)
❼ connector (LI-18P board, to CN961)
❶ screws (M2×4)

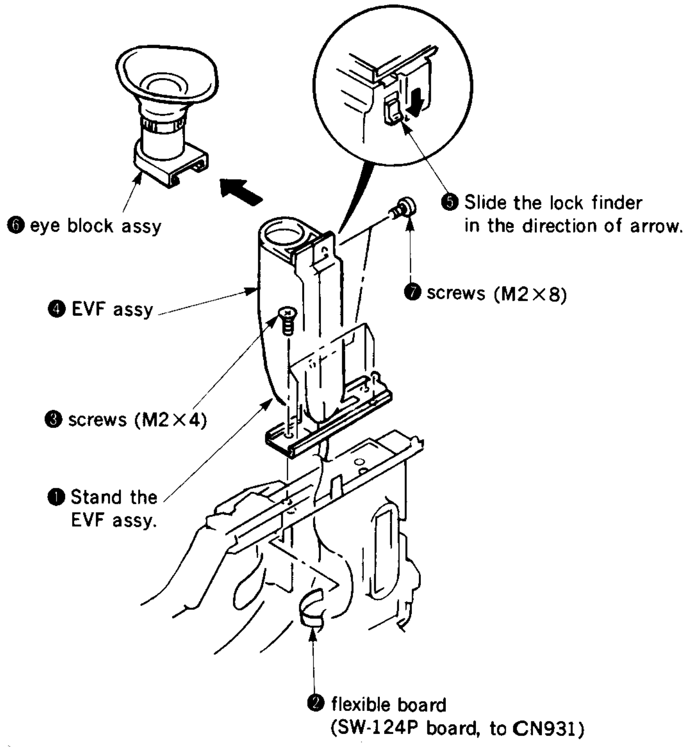
2-5. REMOVAL OF CABINET (R) ASSY

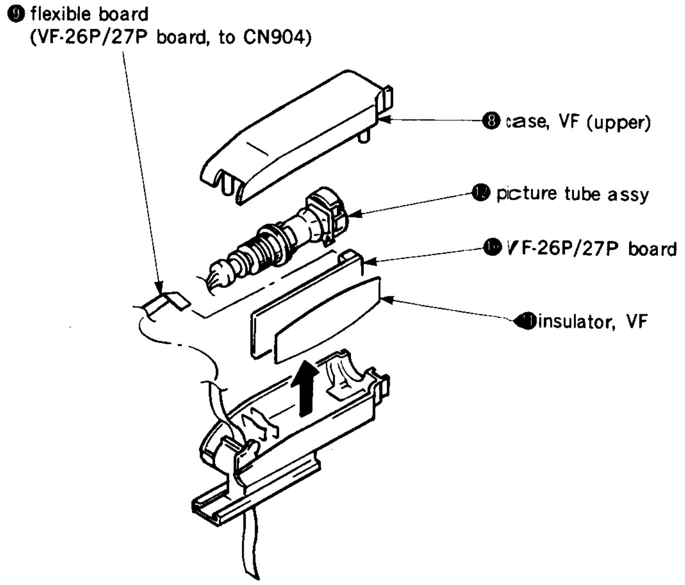

❷ cabinet (R) assy
❶ flexible board
(DK-6P board, to CN950)

2-6. REMOVAL OF MICROPHONE (MC-44P BOARD)

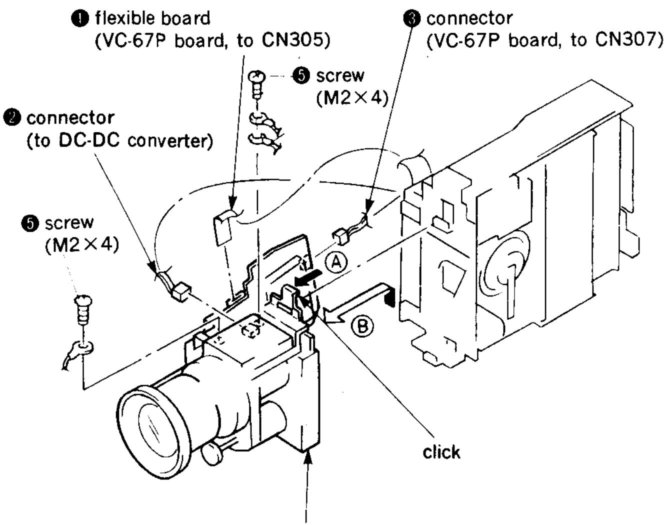

❺ screw (M2×4)
⓫ holder, microphone
❿ microphone
❾ housing, microphone
❽ screw (M2×6)
❼ screw (M2×6)
⓬ screen, wind
❹ connector
(to CN650)
❸ MC-44P board
❻ cover assy, lens
❶ connector
(to CN652)
❷ screw (M2×4)

2-7. REMOVAL OF EVF ASSY


❻ eye block assy
❺ Slide the lock finder
in the direction of arrow.
❼ screws (M2×8)
❹ EVF assy
❸ screws (M2×4)
❶ Stand the
EVF assy.
❷ flexible board
(SW-124P board, to CN931)

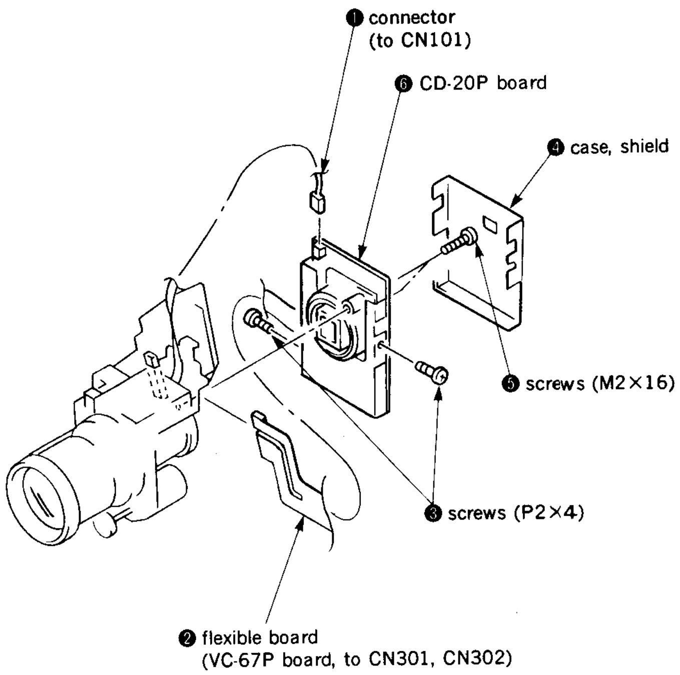

❾ flexible board
(VF-26P/27P board, to CN904)
❽ case, VF (upper)
⓬ picture tube assy
❿ VF-26P/27P board
⓫ insulator, VF

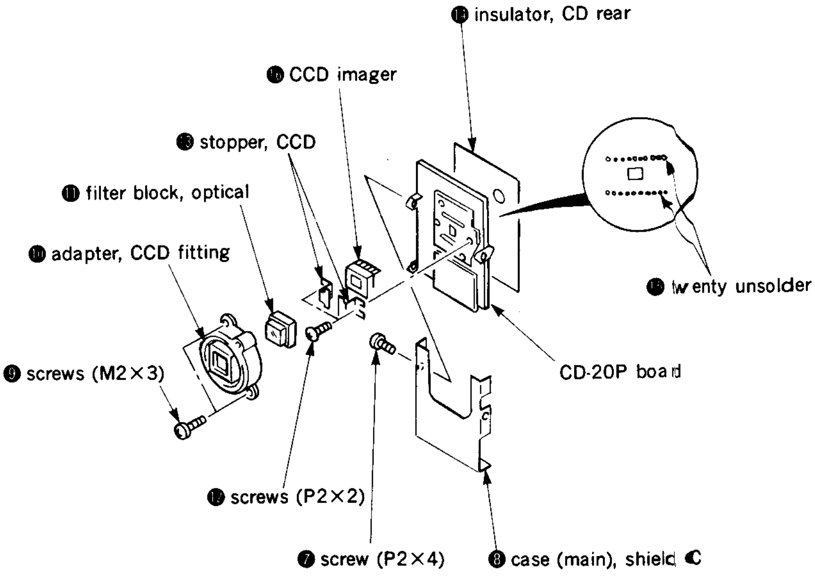
2-8. REMOVAL OF CAMERA BLOCK


❶ flexible board
(VC-67P board, to CN305)
❷ connector
(to DC-DC converter)
❸ connector
(VC-67P board, to CN307)
❺ screw
(M2×4)
❺ screw
(M2×4)
Ⓐ
Ⓑ
click

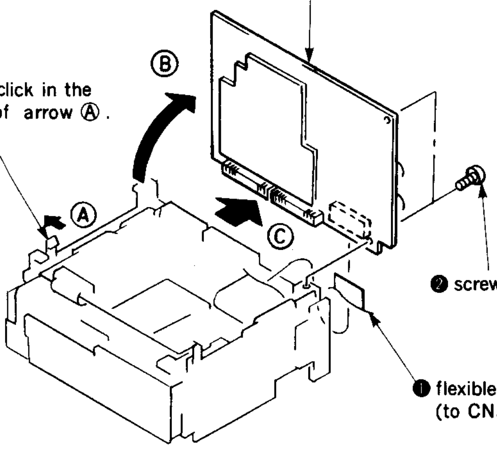
❹ While pushing the click to the direction of arrow Ⓐ, remove the camera block to the direction with arrow Ⓑ.

2-9. REMOVAL OF CCD IMAGER (CD-20P BOARD)


❶ connector
(to CN101)
❻ CD-20P board
❹ case, shield
❺ screws (M2×16)
❸ screws (P2×4)
❷ flexible board
(VC-67P board, to CN301, CN302)


⓯ insulator, CD rear
⓰ CCD imager
⓭ stopper, CCD
⓫ filter block, optical
❿ adapter, CCD fitting
⓮ twenty unsolder
❾ screws (M2×3)
CD-20P board
⓬ screws (P2×2)
❼ screw (P2×4)
❽ case (main), shield C

2-10. REMOVAL OF VA-46P BOARD



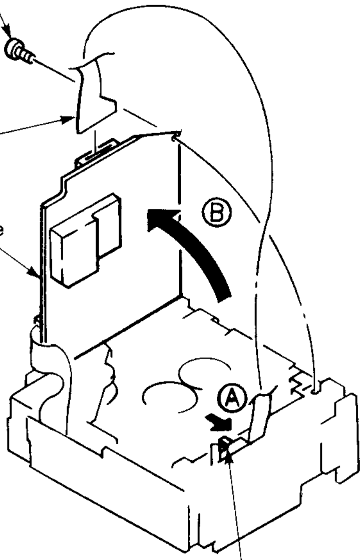
❹ Open the VA-46P board in the direction of arrow Ⓑ, and remove in the direction of arrow Ⓐ.

❸ Push the click in the direction of arrow Ⓐ.

❷ screws (M2×4)

❶ flexible board (to CN508)

2-11. REMOVAL OF SS-100P BOARD



❷ screw (M2×4)

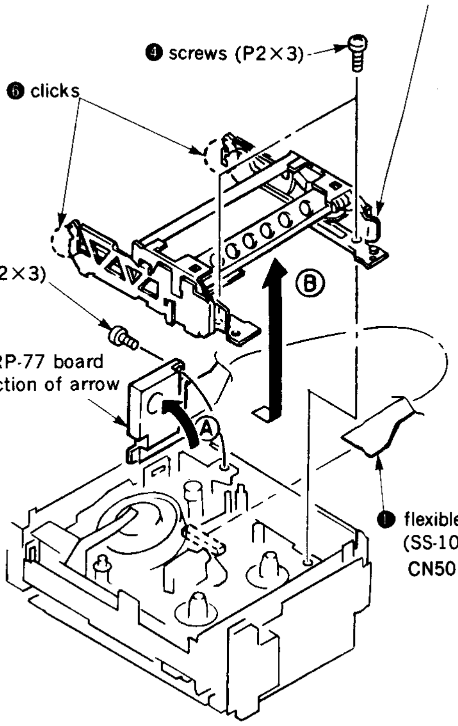
❶ flexible board (to CN509)

❹ Open the SS-100P board in the direction of arrow Ⓑ.

❸ Push the click in the direction of arrow Ⓐ.

2-12. REMOVAL OF CASSETTE COMPARTMENT ASSEMBLY

Note : When mounting, fit the clicks ❻ into completely, then clamp two screws ❹.



❺ Remove the cassette compartment assy in the direction of arrow Ⓑ.

❹ screws (P2×3)

❻ clicks

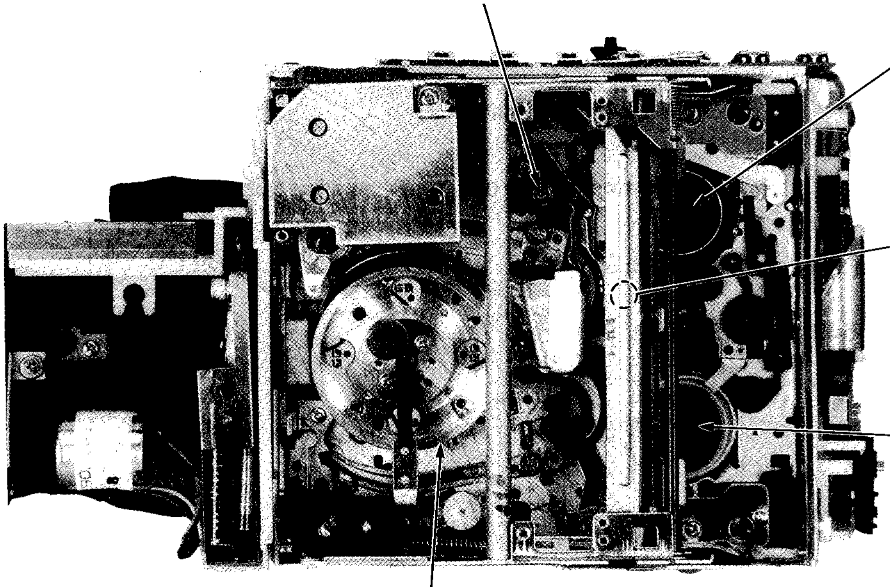
❷ screw (P2×3)

❸ Open the RP-77 board in the direction of arrow Ⓐ.

❶ flexible board (SS-100P board, to CN501)

2-13. INTERNAL VIEWS

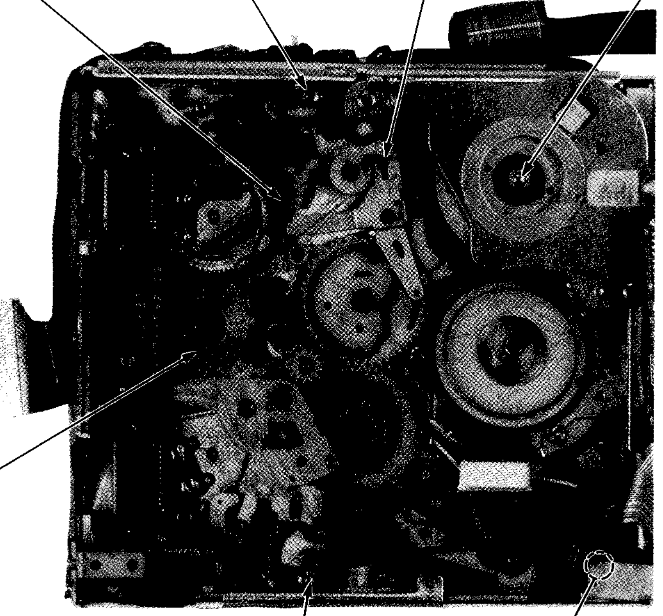
— Upper —


ARM Block Assy, Pinch
A-7040-219-A
Table assy, reel, take-up
X-3728-855-1
Tape top/Tape end LED
(GL-452S)
Table assy, reel, supply
X-3728-851-1

Drum

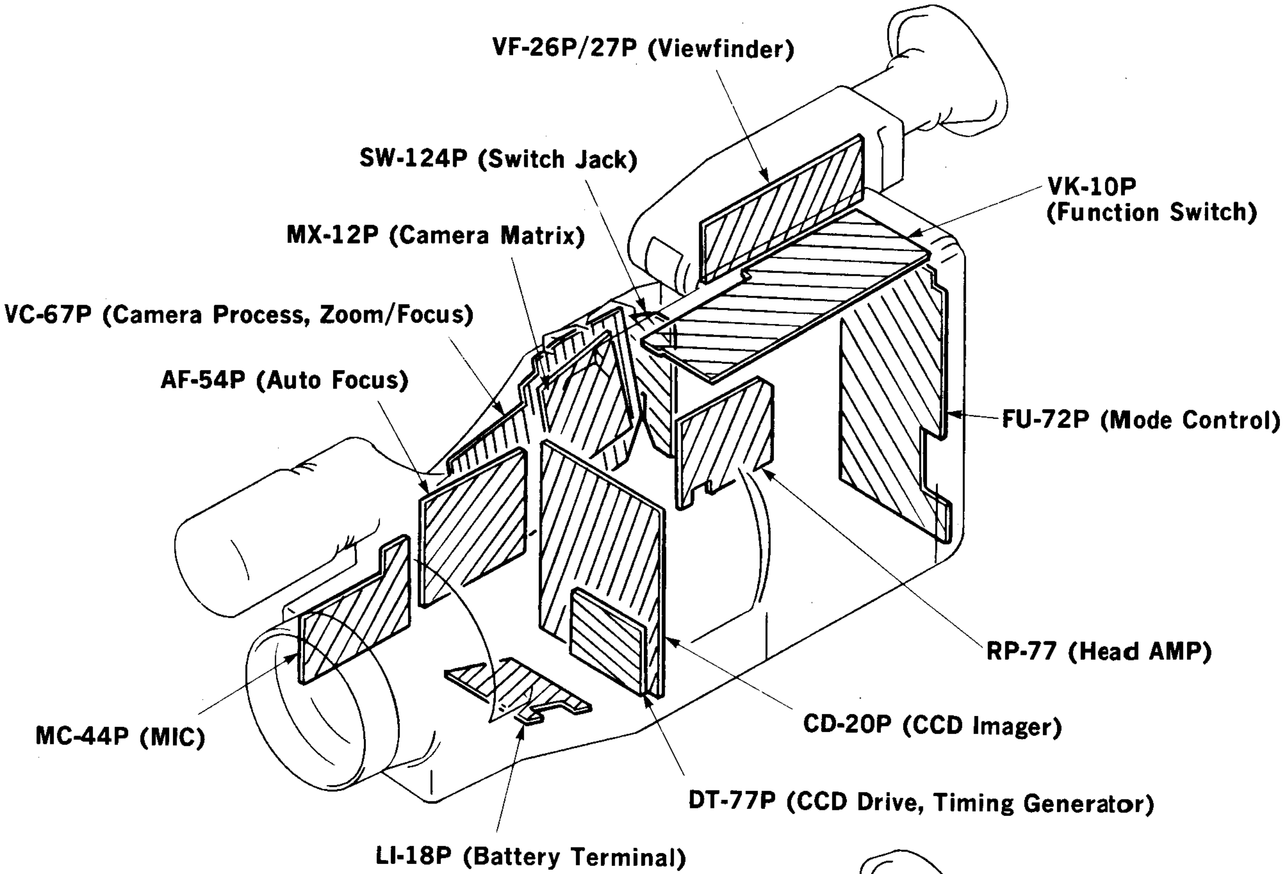
Drum ASSY (DGU-64A-R)	A-7048-405-A
Drum upper (DGR-64-R)	A-7049-343-A

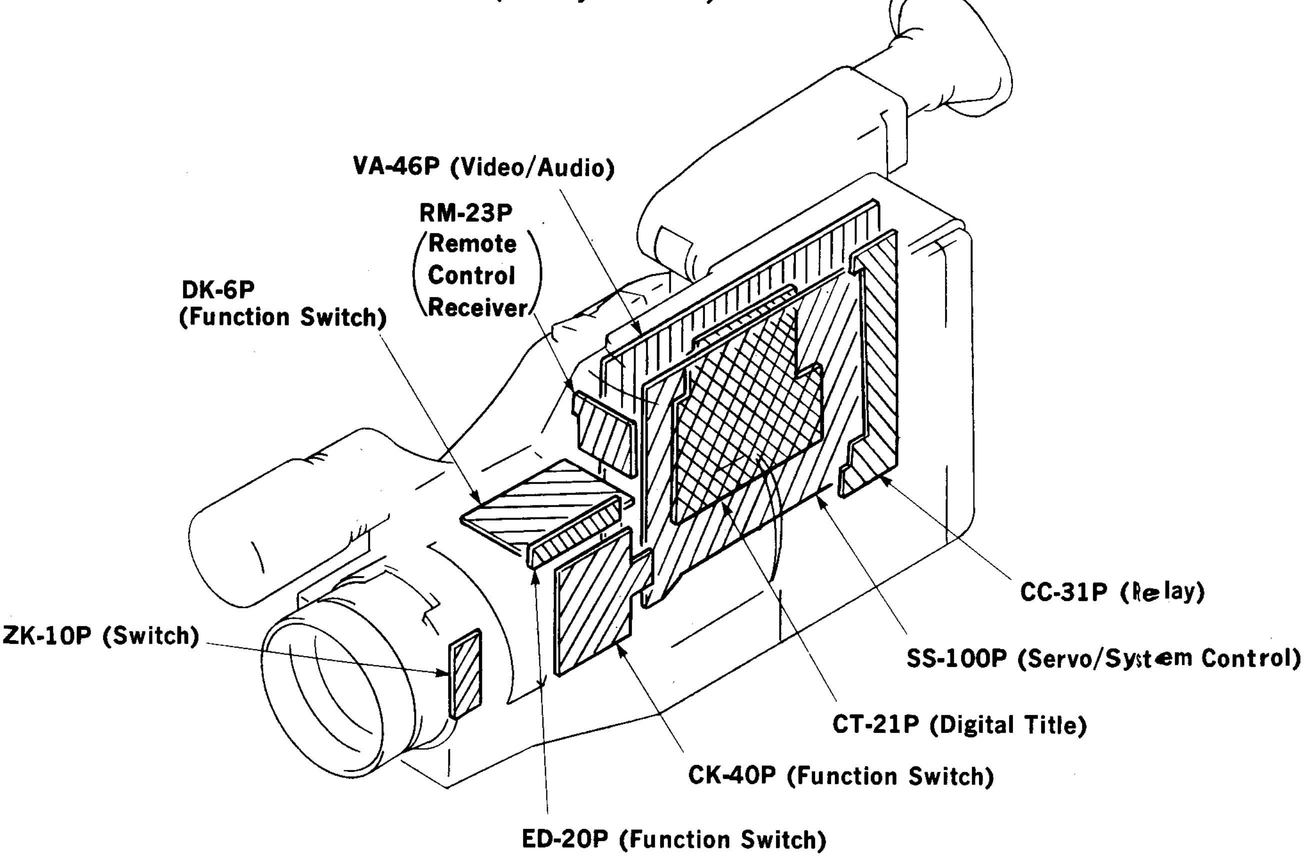
— Lower —


Belt (L), timing
3-741-197-01
Tape top sensor (EE-TP109)
8-729-906-48
Belt (S), timing
3-728-866-11
Motor, capstan (M902)
8-835-331-01
Gear assy, RK
X-3728-866-1
Tape end sensor
(EE-TP109)
8-729-906-48
Motor assy, loading (M903)
A-7040-208-A

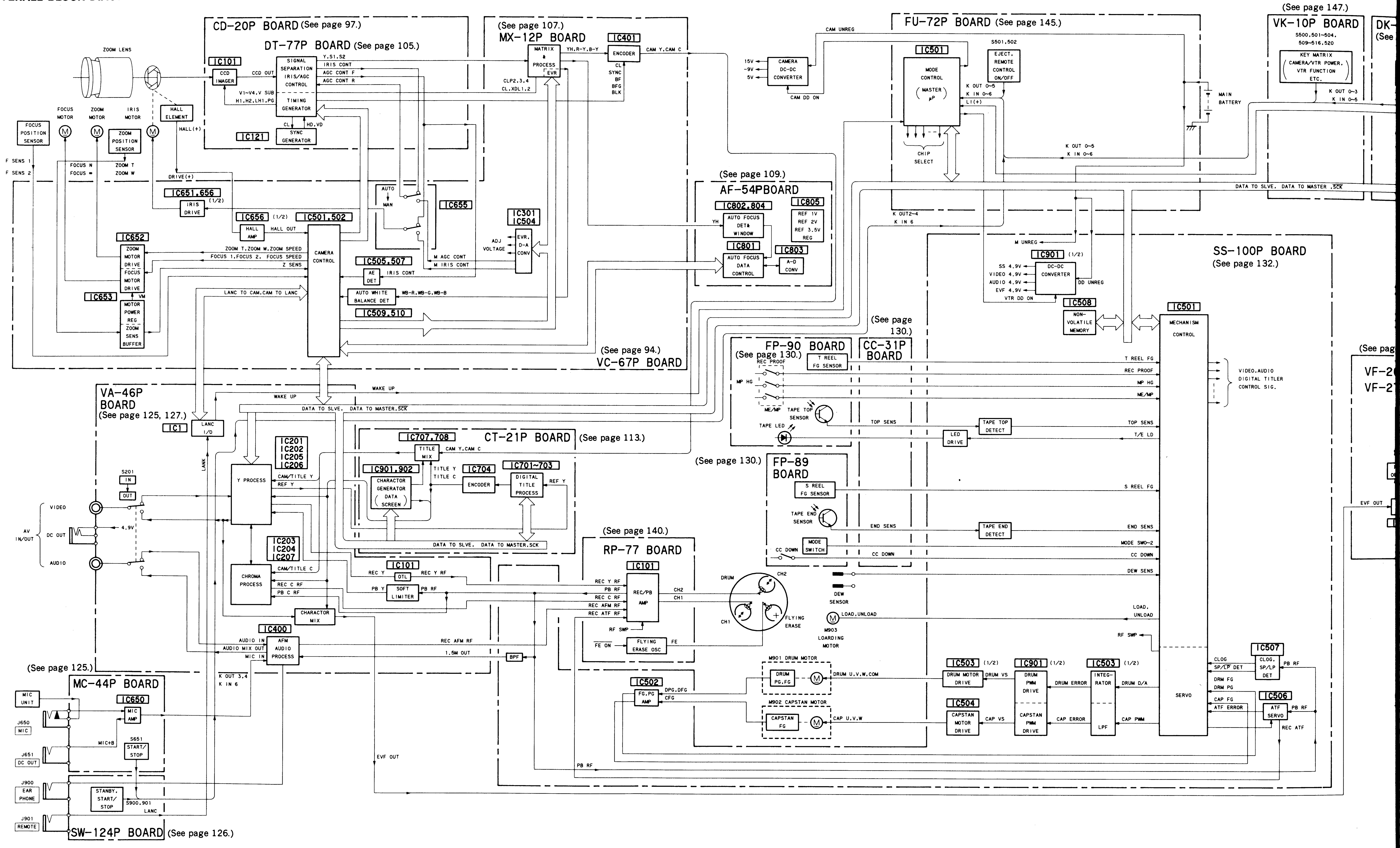
SECTION 3
DIAGRAMS

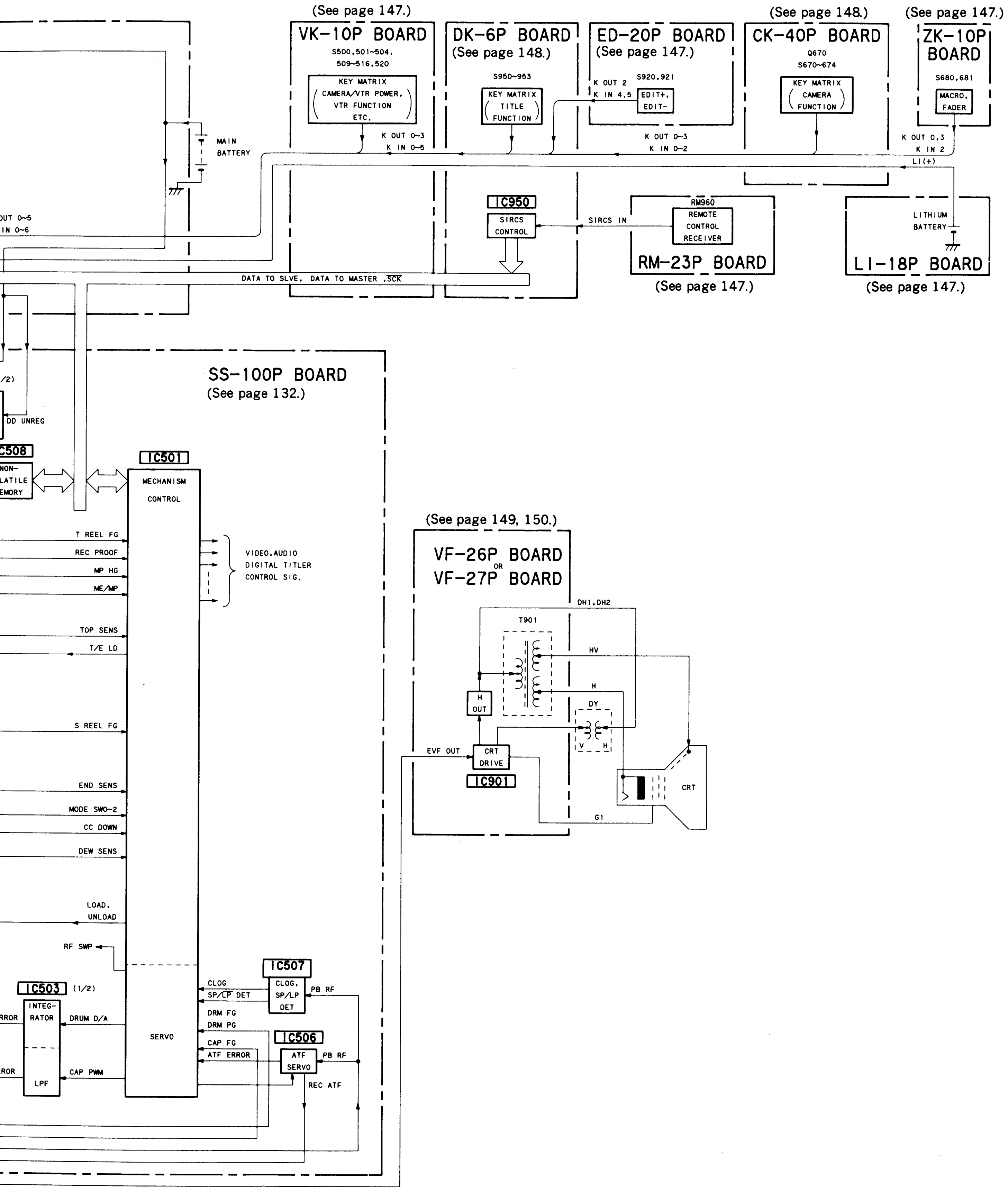
3-1. CIRCUIT BOARDS LOCATION


VF-26P/27P (Viewfinder)
SW-124P (Switch Jack)
VK-10P (Function Switch)
MX-12P (Camera Matrix)
VC-67P (Camera Process, Zoom/Focus)
AF-54P (Auto Focus)
FU-72P (Mode Control)
RP-77 (Head AMP)
MC-44P (MIC)
CD-20P (CCD Imager)
DT-77P (CCD Drive, Timing Generator)
LI-18P (Battery Terminal)

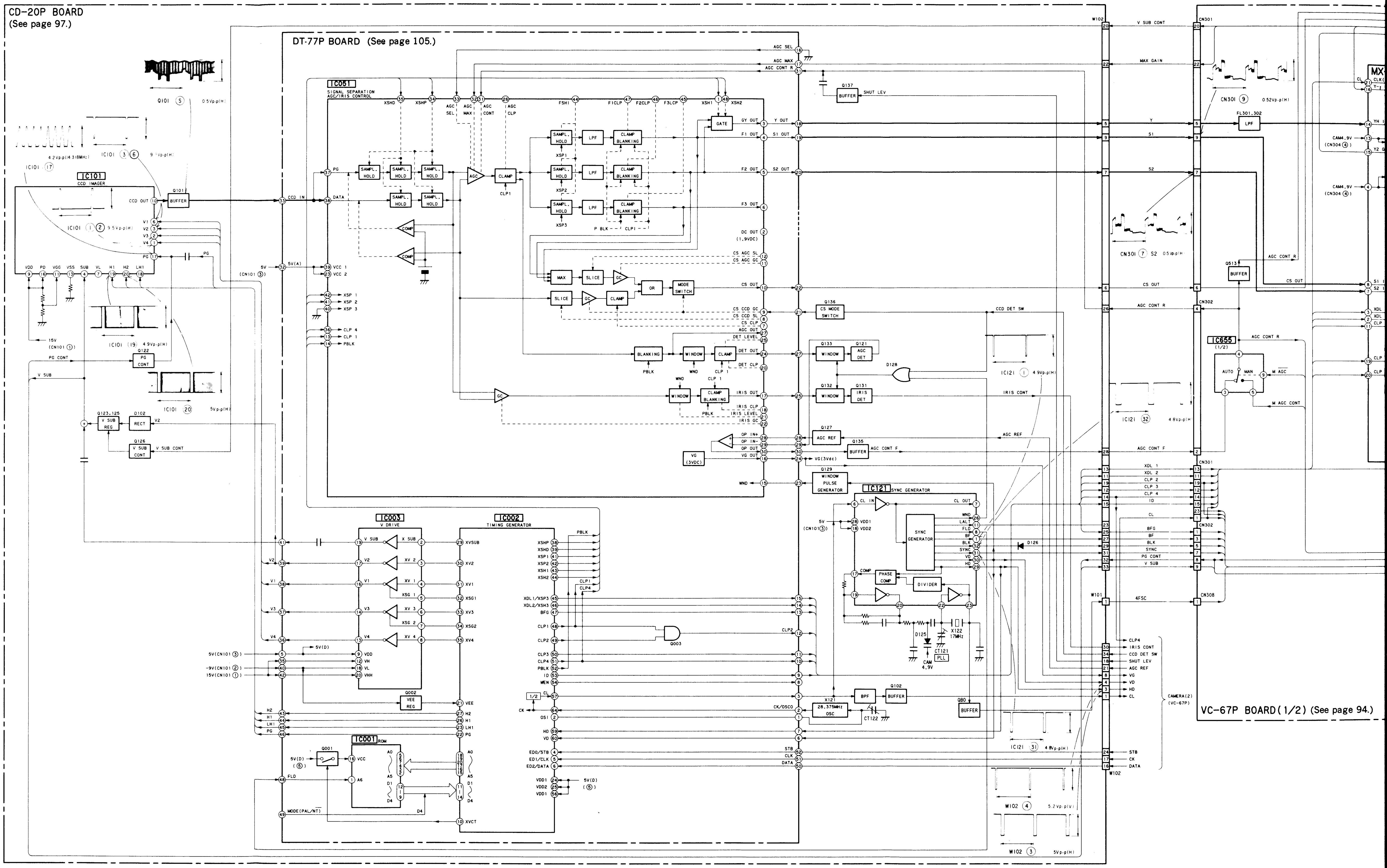

VA-46P (Video/Audio)
RM-23P (Remote Control Receiver)
DK-6P (Function Switch)
CC-31P (Relay)
SS-100P (Servo/System Control)
ZK-10P (Switch)
CT-21P (Digital Title)
CK-40P (Function Switch)
ED-20P (Function Switch)

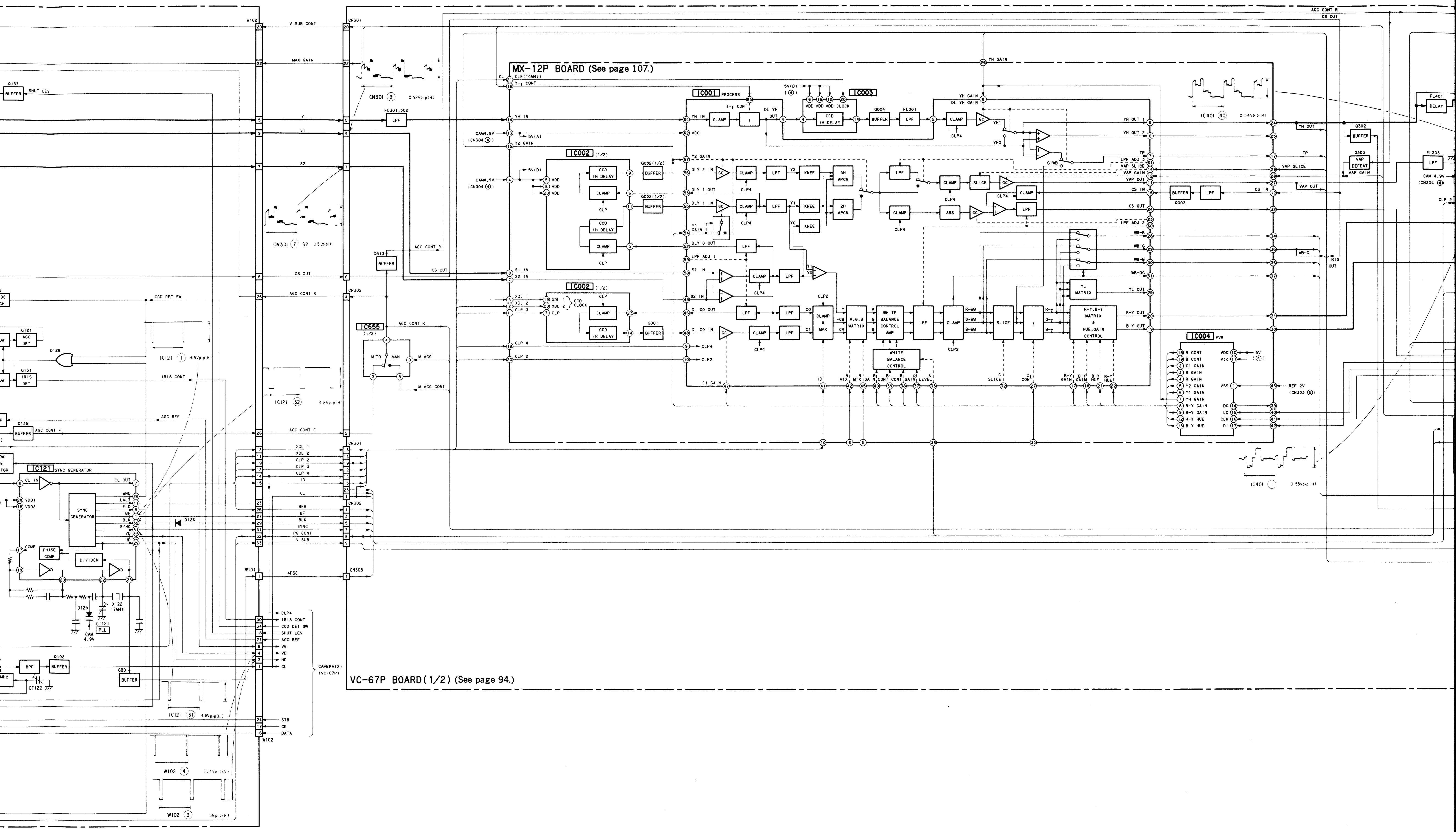
3-2. OVERALL BLOCK DIAGRAM


CD-20P BOARD (See page 97.)
DT-77P BOARD (See page 105.)
(See page 107.)
MX-12P BOARD
IC401
ENCODER
CAM Y.CAM C
MATRIX & PROCESS
EVR
YH.R-Y.B-Y
CLP2.3.4
CL.XDL1.2
CL
SYNC
BF
BFG
BLK
ZOOM LENS
IC101
CCD IMAGER
CCD OUT
SIGNAL SEPARATION IRIS/AGC CONTROL
TIMING GENERATOR
Y.S1.S2
IRIS CONT
AGC CONT F
AGC CONT R
V1-V4.V SUB
H1.H2.LH1.PG
IC121
SYNC GENERATOR
CL
HD.VD
FOCUS MOTOR
ZOOM MOTOR
IRIS MOTOR
HALL ELEMENT
HALL(+)
FOCUS POSITION SENSOR
ZOOM POSITION SENSOR
F SENS 1
F SENS 2
FOCUS N
FOCUS ∞
ZOOM T
ZOOM W
DRIVE(+)
IC651.656
(1/2)
IRIS DRIVE
IC656
(1/2)
IC501.502
HALL AMP
HALL OUT
AUTO
MAN
IC655
IC652
ZOOM MOTOR DRIVE
FOCUS MOTOR DRIVE
IC653
VM
MOTOR POWER REG
ZOOM SENS BUFFER
ZOOM T.ZOOM W.ZOOM SPEED
FOCUS 1.FOCUS 2. FOCUS SPEED
Z SENS
CAMERA CONTROL
LANC TO CAM.CAM TO LANC
IC505.507
AE DET
IRIS CONT
AUTO WHITE BALANCE DET
WB-R.WB-G.WB-B
IC509.510
IC301
IC504
ADJ VOLTAGE
EVR. D-A CONV
M AGC CONT
M IRIS CONT
(See page 94.)
VC-67P BOARD
CAM UNREG
15V
-9V
5V
CAMERA DC-DC CONVERTER
CAM DD ON
(See page 109.)
AF-54PBOARD
IC802.804
AUTO FOCUS DET& WINDOW
YH
IC805
REF 1V
REF 2V
REF 3.5V
REG
IC801
AUTO FOCUS DATA CONTROL
IC803
A-D CONV
FU-72P BOARD (See page 145.)
IC501
MODE CONTROL
MASTER μP
S501.502
EJECT. REMOTE CONTROL ON/OFF
K OUT 0-5
K IN 0-6
LI(+)
CHIP SELECT
MAIN BATTERY
K OUT 0-5
K IN 0-6
K OUT2-4
K IN 6
(See page 147.)
VK-10P BOARD
S500.501-504.
509-516.520
KEY MATRIX
CAMERA/VTR POWER.
VTR FUNCTION
ETC.
K OUT 0-3
K IN 0-5
DATA TO SLVE. DATA TO MASTER.SCK
M UNREG
IC901
(1/2)
DC-DC CONVERTER
SS 4.9V
VIDEO 4.9V
AUDIO 4.9V
EVF 4.9V
VTR DD ON
DD UNREG
IC508
NON-VOLATILE MEMORY
SS-100P BOARD
(See page 132.)
IC501
MECHANISM CONTROL
SERVO
(See page 130.)
CC-31P BOARD
FP-90 BOARD
(See page 130.)
REC PROOF
T REEL FG SENSOR
MP HG
ME/MP
TAPE TOP SENSOR
TAPE LED
TOP SENS
TAPE TOP DETECT
LED DRIVE
T REEL FG
REC PROOF
MP HG
ME/MP
VIDEO.AUDIO
DIGITAL TITLER
CONTROL SIG.
TOP SENS
T/E LD
(See page 130.)
FP-89 BOARD
S REEL FG SENSOR
TAPE END SENSOR
MODE SWITCH
CC DOWN
END SENS
TAPE END DETECT
S REEL FG
END SENS
MODE SWO-2
CC DOWN
DEW SENS
DEW SENSOR
M903
LOADING MOTOR
LOAD.UNLOAD
LOAD.
UNLOAD
RF SWP
VA-46P BOARD
(See page 125, 127.)
IC1
LANC I/O
LANK
WAKE UP
DATA TO SLVE. DATA TO MASTER.SCK
IC201
IC202
IC205
IC206
Y PROCESS
CAM/TITLE Y
REF Y
IC203
IC204
IC207
CHROMA PROCESS
CAM/TITLE C
REC C RF
PB C RF
CHARACTOR MIX
S201
IN
OUT
VIDEO
AV IN/OUT
DC OUT
4.9V
AUDIO
CT-21P BOARD (See page 113.)
IC707.708
TITLE MIX
CAM Y.CAM C
IC901.902
CHARACTOR GENERATOR
DATA SCREEN
TITLE Y
TITLE C
IC704
ENCODER
IC701-703
DIGITAL TITLE PROCESS
REF Y
IC101
OTL
REC Y
REC Y RF
PB Y
SOFT LIMITER
PB RF
IC400
AFM AUDIO PROCESS
AUDIO IN
AUDIO MIX OUT
MIC IN
REC AFM RF
1.5M OUT
BPF
K OUT 3.4
K IN 6
EVF OUT
(See page 140.)
RP-77 BOARD
IC101
REC/PB AMP
REC Y RF
PB RF
REC C RF
REC AFM RF
REC ATF RF
CH2
CH1
RF SWP
FLYING ERASE OSC
FE ON
FE
DRUM
FLYING ERASE
IC502
FG.PG AMP
DPG.DFG
CFG
M901 DRUM MOTOR
DRUM PG.FG
DRUM U.V.W.COM
M902 CAPSTAN MOTOR
CAPSTAN FG
CAP U.V.W
IC503
(1/2)
DRUM MOTOR DRIVE
DRUM VS
IC504
CAPSTAN MOTOR DRIVE
CAP VS
IC901
(1/2)
DRUM PWM DRIVE
CAPSTAN PWM DRIVE
DRUM ERROR
CAP ERROR
IC503
(1/2)
INTEG-RATOR
LPF
DRUM D/A
CAP PWM
IC507
CLOG. SP/LP DET
CLOG
SP/LP DET
PB RF
DRM FG
DRM PG
CAP FG
ATF ERROR
IC506
ATF SERVO
REC ATF
PB RF
(See page 125.)
MC-44P BOARD
MIC UNIT
IC650
MIC AMP
J650
MIC
MIC+B
S651
START/STOP
J651
DC OUT
J900
EAR PHONE
STANBY.
START/
STOP
S900.901
LANC
J901
REMOTE
SW-124P BOARD (See page 126.)
EVF OUT
VF-2
VF-2
(See pag
DK-
(See

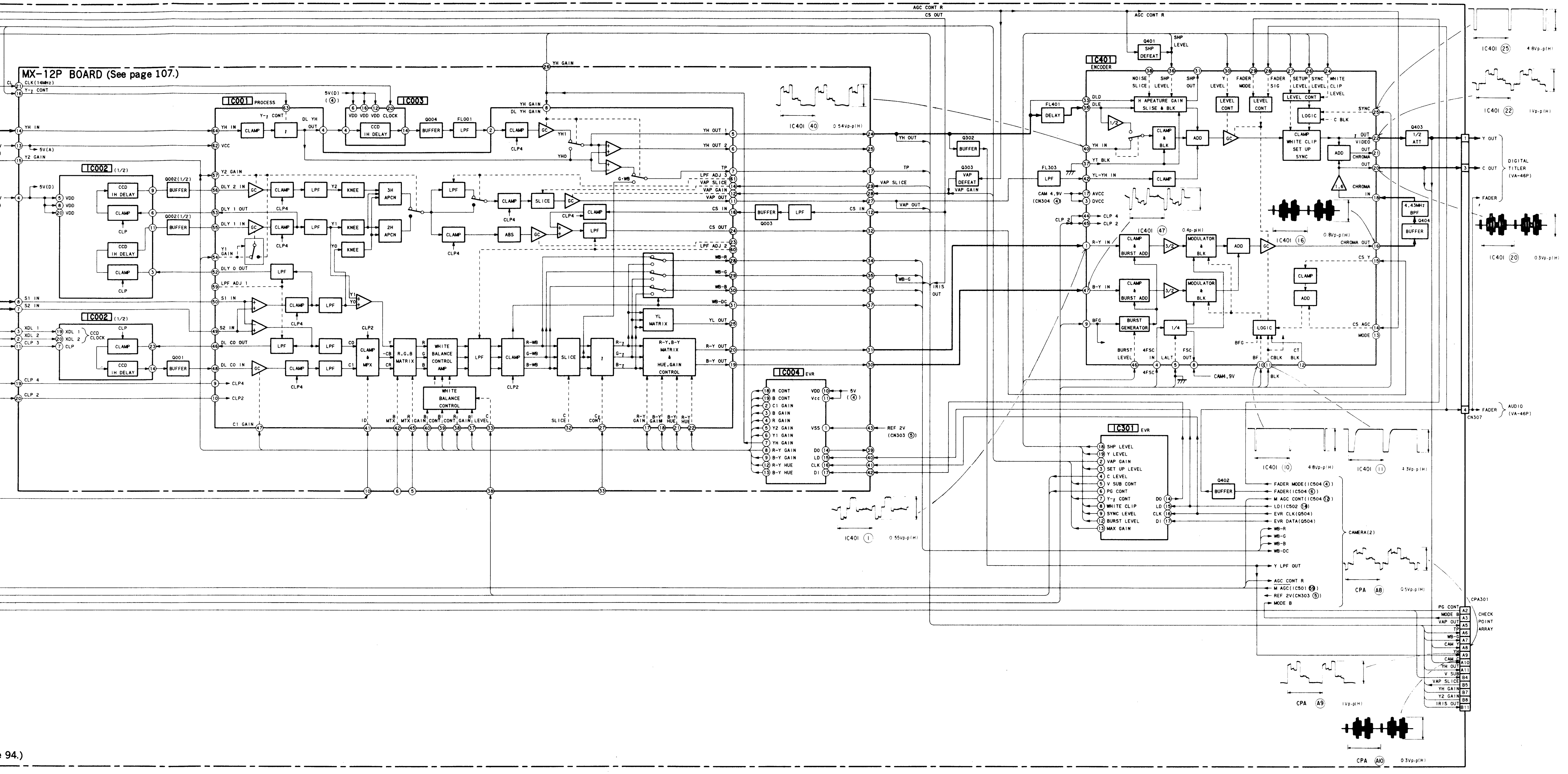

(See page 147.)
VK-10P BOARD
S500,501~504,
509~516,520
KEY MATRIX
CAMERA/VTR POWER,
VTR FUNCTION
ETC.
K OUT 0~3
K IN 0~5
DK-6P BOARD
(See page 148.)
S950~953
KEY MATRIX
TITLE
FUNCTION
ED-20P BOARD
(See page 147.)
K OUT 2
K IN 4.5
S920,921
EDIT+,
EDIT-
K OUT 0~3
K IN 0~2
(See page 148.)
CK-40P BOARD
Q670
S670~674
KEY MATRIX
CAMERA
FUNCTION
(See page 147.)
ZK-10P
BOARD
S680,681
MACRO,
FADER
K OUT 0,3
K IN 2
LI(+)
MAIN
BATTERY
OUT 0~5
IN 0~6
IC950
SIRCS
CONTROL
SIRCS IN
RM960
REMOTE
CONTROL
RECEIVER
RM-23P BOARD
(See page 147.)
LITHIUM
BATTERY
LI-18P BOARD
(See page 147.)
DATA TO SLVE, DATA TO MASTER ,SCK
SS-100P BOARD
(See page 132.)
/2)
DD UNREG
C508
NON-
LATILE
EMORY
IC501
MECHANISM
CONTROL
T REEL FG
REC PROOF
MP HG
ME/MP
VIDEO,AUDIO
DIGITAL TITLER
CONTROL SIG.
TOP SENS
T/E LD
S REEL FG
END SENS
MODE SW0~2
CC DOWN
DEW SENS
LOAD,
UNLOAD
RF SWP
SERVO
IC507
CLOG,
SP/LP
DET
CLOG
SP/LP DET
PB RF
IC503
(1/2)
INTEG-
RATOR
LPF
RROR
ROR
DRUM D/A
CAP PWM
DRM FG
DRM PG
CAP FG
ATF ERROR
IC506
ATF
SERVO
PB RF
REC ATF
(See page 149, 150.)
VF-26P BOARD
OR
VF-27P BOARD
DH1,DH2
T901
HV
H
H
OUT
DY
V
H
EVF OUT
CRT
DRIVE
IC901
CRT
G1

3-3. CAMERA (1) BLOCK DIAGRAM


CD-20P BOARD
(See page 97.)
DT-77P BOARD (See page 105.)
VC-67P BOARD(1/2) (See page 94.)
IC101 CCD IMAGER
Q101 BUFFER
IC051 SIGNAL SEPARATION AGC/IRIS CONTROL
SAMPL. HOLD
AGC
CLAMP
LPF
CLAMP BLANKING
GATE
MAX
SLICE
GC
OR
MODE SWITCH
WINDOW
COMP
Q137 BUFFER
Q136 CS MODE SWITCH
Q133 WINDOW
Q121 AGC DET
Q132 WINDOW
Q131 IRIS DET
Q127 AGC REF
Q135 BUFFER
Q129 WINDOW PULSE GENERATOR
IC121 SYNC GENERATOR
SYNC GENERATOR
PHASE COMP
DIVIDER
X121 28.375MHz OSC
BPF
Q102 BUFFER
Q80 BUFFER
X122 17MHz
CT121 PLL
CT122
D125
D126
D128
IC003 V DRIVE
IC002 TIMING GENERATOR
IC001 ROM
Q001
Q002 VEE REG
Q003
Q122 PG CONT
Q123,125 V SUB REG
D102 RECT
Q126 V SUB CONT
VG (3VDC)
IC655 (1/2)
AUTO
MAN
M AGC
Q513 BUFFER
FL301,302 LPF
W101
W102
CN301
CN302
CN308
CAMERA(2) (VC-67P)
Q101 ⑤ 0.5Vp-p(H)
IC101 ③⑥ 9.1Vp-p(H)
4.2Vp-p(4.318MHz)
IC101 ⑰
IC101 ①② 9.5Vp-p(H)
IC101 ⑲ 4.9Vp-p(H)
IC101 ⑳ 5Vp-p(H)
IC121 ① 4.9Vp-p(H)
IC121 ㉜ 4.8Vp-p(H)
IC121 ㉛ 4.8Vp-p(H)
W102 ④ 5.2Vp-p(V)
W102 ③ 5Vp-p(H)
CN301 ⑨ 0.52Vp-p(H)
CN301 ⑦ S2 0.5Vp-p(H)
V SUB CONT
MAX GAIN
Y
S1
S2
CS OUT
AGC CONT R
AGC CONT F
AGC REF
CCD DET SW
IRIS CONT
SHUT LEV
XDL 1
XDL 2
CLP 2
CLP 3
CLP 4
ID
CL
BFG
BF
BLK
SYNC
PG CONT
V SUB
4FSC
STB
CK
DATA
VG
VD
HD
CCD IN
CCD OUT
PG
DATA
5V(CN101 ③)
-9V(CN101 ②)
15V(CN101 ①)
MODE(PAL/NT)
FLD
CAM4.9V



MX-12P BOARD (See page 107.)
VC-67P BOARD(1/2) (See page 94.)
W102
CN301
CN302
CN308
W101
V SUB CONT
MAX GAIN
SHUT LEV
Y
S1
S2
CS OUT
AGC CONT R
AGC CONT F
CCD DET SW
AGC REF
IRIS CONT
IC121 SYNC GENERATOR
SYNC GENERATOR
PHASE COMP
DIVIDER
BPF
BUFFER
Q137
Q121
Q131
Q135
Q102
Q80
D128
D126
D125
X122 17MHz
CT121 PLL
CT122
CAM 4.9V
AGC DET
IRIS DET
XDL 1
XDL 2
CLP 2
CLP 3
CLP 4
ID
CL
BFG
BF
BLK
SYNC
PG CONT
V SUB
4FSC
CLP4
IRIS CONT
CCD DET SW
SHUT LEV
AGC REF
VG
VD
HD
CL
STB
CK
DATA
CAMERA(2) (VC-67P)
IC121 ① 4.9Vp-p(H)
IC121 ㉜ 4.8Vp-p(H)
IC121 ㉛ 4.8Vp-p(H)
W102 ④ 5.2Vp-p(V)
W102 ③ 5Vp-p(H)
CN301 ⑨ 0.52Vp-p(H)
CN301 ⑦ S2 0.5Vp-p(H)
FL301,302
LPF
Q513
IC655 (1/2)
AUTO
MAN
M AGC
M AGC CONT
IC001 PROCESS
IC002 (1/2)
IC003
IC004 EVR
CCD 1H DELAY
CLAMP
CLP
Q002(1/2)
Q001
Q003
Q004
FL001
YH IN
VCC
Y2 GAIN
Y-γ CONT
DL YH OUT
5V(D)
VDD VDD VDD CLOCK
YH GAIN
DL YH GAIN
YH1
YH0
YH OUT 1
YH OUT 2
DLY 2 IN
DLY 1 OUT
DLY 1 IN
Y1 GAIN
DLY 0 OUT
LPF ADJ 1
S1 IN
S2 IN
DL C0 OUT
DL C0 IN
CLP 4
CLP 2
C1 GAIN
KNEE
3H APCN
2H APCN
SLICE
GC
ABS
CLAMP & MPX
R,G,B MATRIX
WHITE BALANCE CONTROL AMP
WHITE BALANCE CONTROL
R-Y,B-Y MATRIX & HUE,GAIN CONTROL
YL MATRIX
TP
LPF ADJ 3
VAP SLICE
VAP GAIN
VAP OUT
CS IN
CS OUT
LPF ADJ 2
WB-R
WB-G
WB-B
WB-DC
YL OUT
R-Y OUT
B-Y OUT
MTX
GAIN
CONT
LEVEL
R-Y GAIN
B-Y GAIN
R-Y HUE
B-Y HUE
CAM4.9V (CN304 ④)
5V(A)
CLK(14MHz)
CCD CLOCK
R CONT
B CONT
C1 GAIN
B GAIN
R GAIN
Y2 GAIN
Y1 GAIN
YH GAIN
VDD
Vcc
VSS
DO
LD
CLK
DI
REF 2V (CN303 ⑤)
IC401 ㊵ 0.54Vp-p(H)
IC401 ① 0.55Vp-p(H)
AGC CONT R
CS OUT
FL401
DELAY
YH OUT
Q302
Q303
VAP DEFEAT
VAP SLICE
VAP GAIN
VAP OUT
FL303
CAM 4.9V (CN304 ④)
WB-C
IRIS OUT
CLP 2


MX-12P BOARD (See page 107.)
IC001 PROCESS
IC002 (1/2)
IC003
IC004 EVR
IC301 EVR
IC401 ENCODER
CCD 1H DELAY
CLAMP
BUFFER
LPF
KNEE
3H APCN
2H APCN
SLICE
ABS
GC
R,G,B MATRIX
WHITE BALANCE CONTROL AMP
WHITE BALANCE CONTROL
YL MATRIX
R-Y,B-Y MATRIX & HUE,GAIN CONTROL
CLAMP & MPX
Q001
Q002(1/2)
Q003
Q004
FL001
YH GAIN
YH OUT
YH OUT 2
TP
VAP SLICE
VAP GAIN
VAP OUT
CS IN
CS OUT
WB-R
WB-G
WB-B
WB-DC
YL OUT
R-Y OUT
B-Y OUT
LPF ADJ 1
LPF ADJ 2
LPF ADJ 3
C1 GAIN
AGC CONT R
Q302 BUFFER
Q303 VAP DEFEAT
Q401 SHP DEFEAT
Q402 BUFFER
Q403 1/2 ATT
Q404 BUFFER
FL401 DELAY
FL303 LPF
H APEATURE GAIN SLISE & BLK
CLAMP & BLK
ADD
LEVEL CONT
LOGIC
CLAMP WHITE CLIP SET UP SYNC
CLAMP & BURST ADD
MODULATOR & BLK
BURST GENERATOR
4.43MHz BPF
1/2
1/4
1.6
IRIS OUT
REF 2V (CN303 ⑤)
CAM 4.9V (CN304 ④)
Y OUT
C OUT
DIGITAL TITLER (VA-46P)
FADER
AUDIO (VA-46P)
CN307
FADER MODE(IC504 ④)
FADER(IC504 ⑥)
M AGC CONT(IC504 ⑫)
LD(IC502 ⑭)
EVR CLK(Q504)
EVR DATA(Q504)
CAMERA(2)
Y LPF OUT
AGC CONT R
M AGC(IC501 ㊾)
REF 2V(CN303 ⑤)
MODE B
CPA301
CHECK POINT ARRAY
PG CONT
MODE B
VAP OUT
TP
WB-G
CAM V
Y
CAM H
YH OUT
V SUB
VAP SLICE
YH GAIN
Y2 GAIN
IRIS OUT
IC401 ㉕ 4.8Vp-p(H)
IC401 ㉒ 1Vp-p(H)
IC401 ⑳ 0.3Vp-p(H)
IC401 ⑯ 0.8Vp-p(H)
IC401 ㊼ 0.4p-p(H)
IC401 ㊵ 0.54Vp-p(H)
IC401 ① 0.55Vp-p(H)
IC401 ⑩ 4.8Vp-p(H)
IC401 ⑪ 4.3Vp-p(H)
CPA A8 0.5Vp-p(H)
CPA A9 1Vp-p(H)
CPA A10 0.3Vp-p(H)
e 94.)

3-4. CAMERA SYSTEM CONTROL VC-67P BOARD IC501 (MC68HC11E9)

〔Description〕

MC68HC11E9 is a 8-bit one-chip micro controller with a built-in nonvolatile memory (EEPROM). All the camera system, which has been composed by mere than one, can be controlled by only this micro controller. In addition, protocol master control of the LANC communication can be performed.

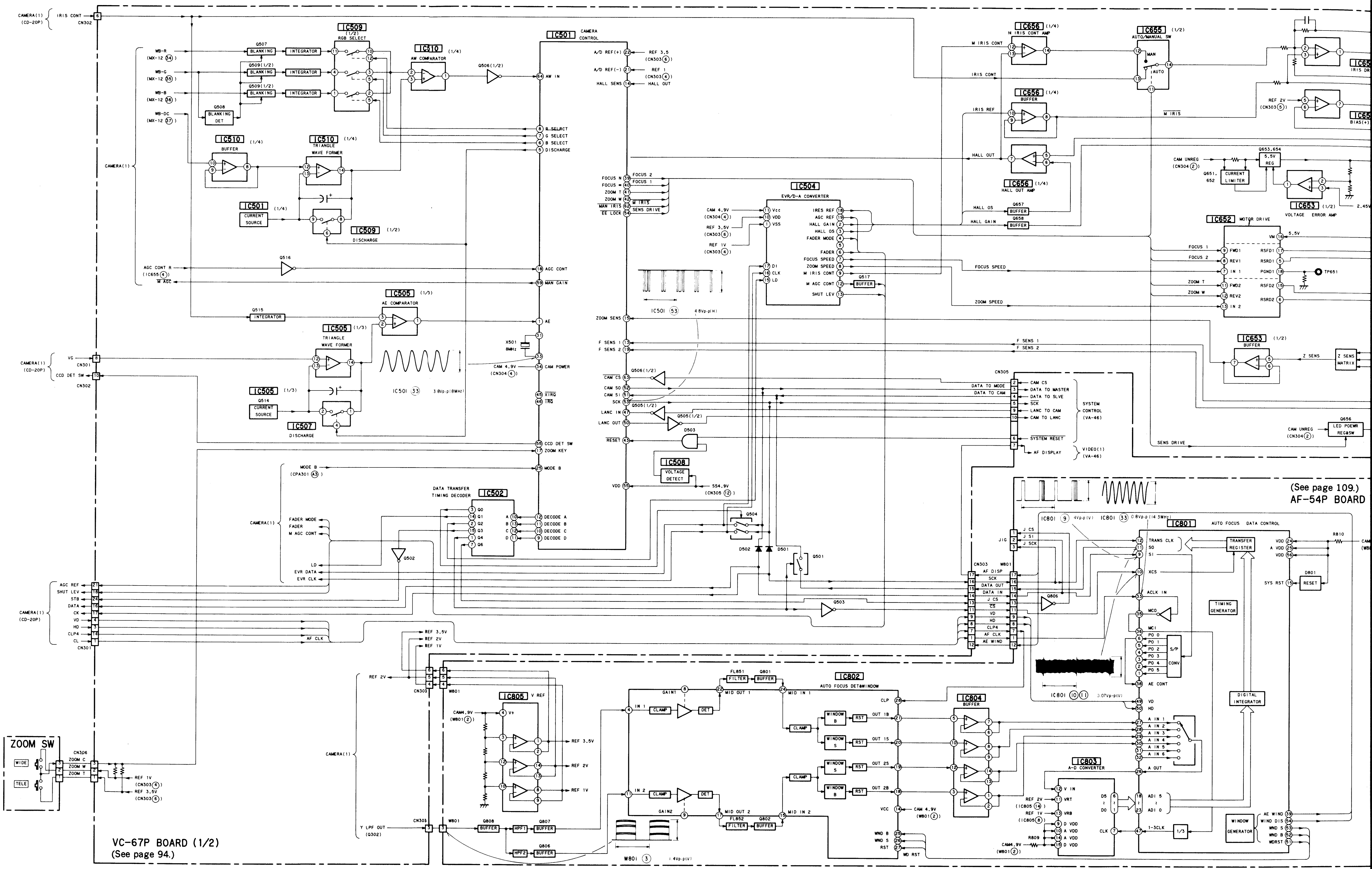
1. Function

1) EVR Control
2) AWB Control
3) AE Control
4) AF Control
5) LANC communication protocol control

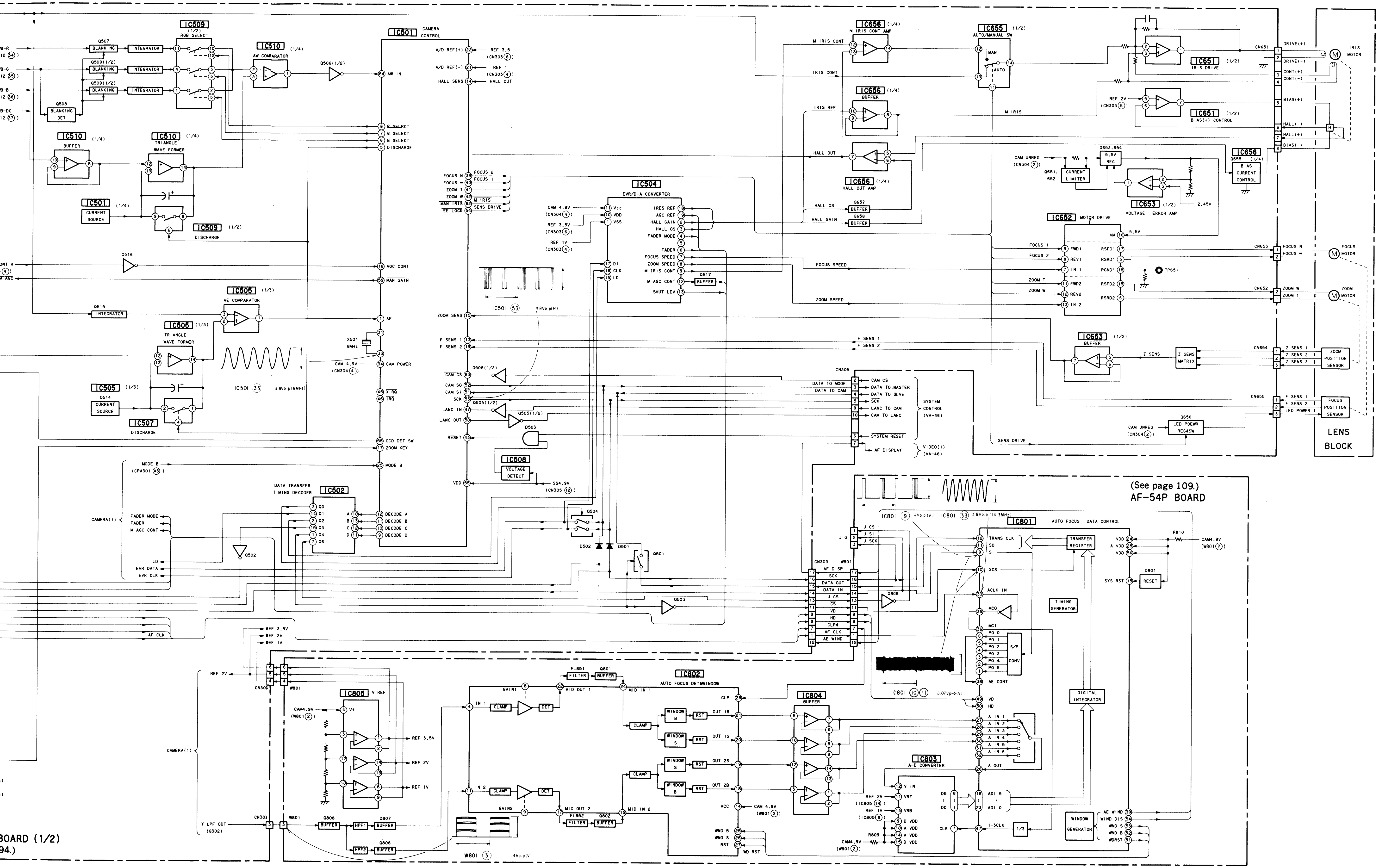
2. Pin Description

PIN No.	PIN Name	I/O	Function
1	AE	I	AE Integration-type A/D converter comparator input
2	NC	—	——
3	NC	—	——
4	NC	—	——
5	DISCHG	O	AWB. AE Integration-type A/D reset pulse
6	B SELECT	O	AWB Instrumentation line select pulse (blue)
7	G SELECT	O	AWB Instrumentation line select pulse (green)
8	R SELECT	O	AWB Instrumentation line select pulse (red)
9	DECODE D	O	Decode 4 to 10 and expand port with outside IC (4208)
10	DECODE C	O	Decode 4 to 10 and expand port with outside IC (4208)
11	DECODE B	O	Decode 4 to 10 and expand port with outside IC (4208)
12	DECODE A	O	Decode 4 to 10 and expand port with outside IC (4208)
13	F SENS1	I	Focus sensor 1 voltage entrance (Analog input)
14	HALL SENS	I	Hall element voltage input (Analog input)
15	ZOOM SENS	I	Zoom position detection voltage input (Analog input)
16	AN5	I	NC Not used
17	ZOOM KEY	I	Zoom switch voltage input (Analog input)
18	AGC CONT	I	AGC voltage input (Analog input)
19	F SENS2	I	Focus sensor 2 voltage input (Analog input)
20	AN7	I	NC Not used
21	A/D REF(−)	—	Built-in A/D converter the minimum standard voltage (Analog input)
22	A/D REF(+)	—	Built-in A/D converter the minimum standard voltage (Analog input)
23	V_{SS}	—	GND
24	V_{SS}	—	GND
25	MODE B	I	Pull up to SS4.9V
26	NC	—	——
27	MODA	I	Pull down to GND
28	STR A	—	NC Not used
29	E	—	NC Not used
30	STR B	—	NC Not used
31	EXTAL	O	Built-in inverter output for oscillating element
32	NC	—	——
33	XTAL	I	Built-in inverter input for oscillating element
34	CAM POWER	I	Camera power source rise supervision
35	NC	—	——
36	PC1	—	NC
37	PC2	I	Pull up to SS4.9V
38	PC3	—	NC
39	FOCUS N	O	Focus motor N-direction rotating designation
40	FOCUS ∞	O	Focus motor ∞-direction rotating designation
41	ZOOM T	O	Zoom motor T-direction rotating designation
42	ZOOM W	O	Zoom motor W-direction rotating designation
43	$\overline{\text{RESET}}$	I	Reset
44	NC	—	——
45	$\overline{\text{XIRQ}}$	I	Pull up to SS4.9V
46	$\overline{\text{IRQ}}$	I	Pull up to SS4.9V
47	LANC IN	I	LANC input
48	NC	—	——
49	V_{SS}	—	GND
50	LANC OUT	O	LANC output
51	CAM SI	I	Serial data input
52	CAM SO	O	Serial data output
53	SCK	O	Serial clock
54	SENS DRIVE	O	AF sensor Luminous pulse output
55	V_{DD}	—	SS4.9V
56	PAI	—	NC
57	PA6	O	CCD DET switch select
58	OC3	—	NC
59	$\overline{\text{MAN GAIN}}$	O	AGC system automatic/manual select
60	NC	—	——
61	NC	—	——
62	$\overline{\text{MAN IRIS}}$	O	IRIS system automatic/manual select
63	$\overline{\text{CAMCS}}$	I	Camera chip select input
64	$\overline{\text{AW IN}}$	I	AWB Integration-type A/D converter comparator input

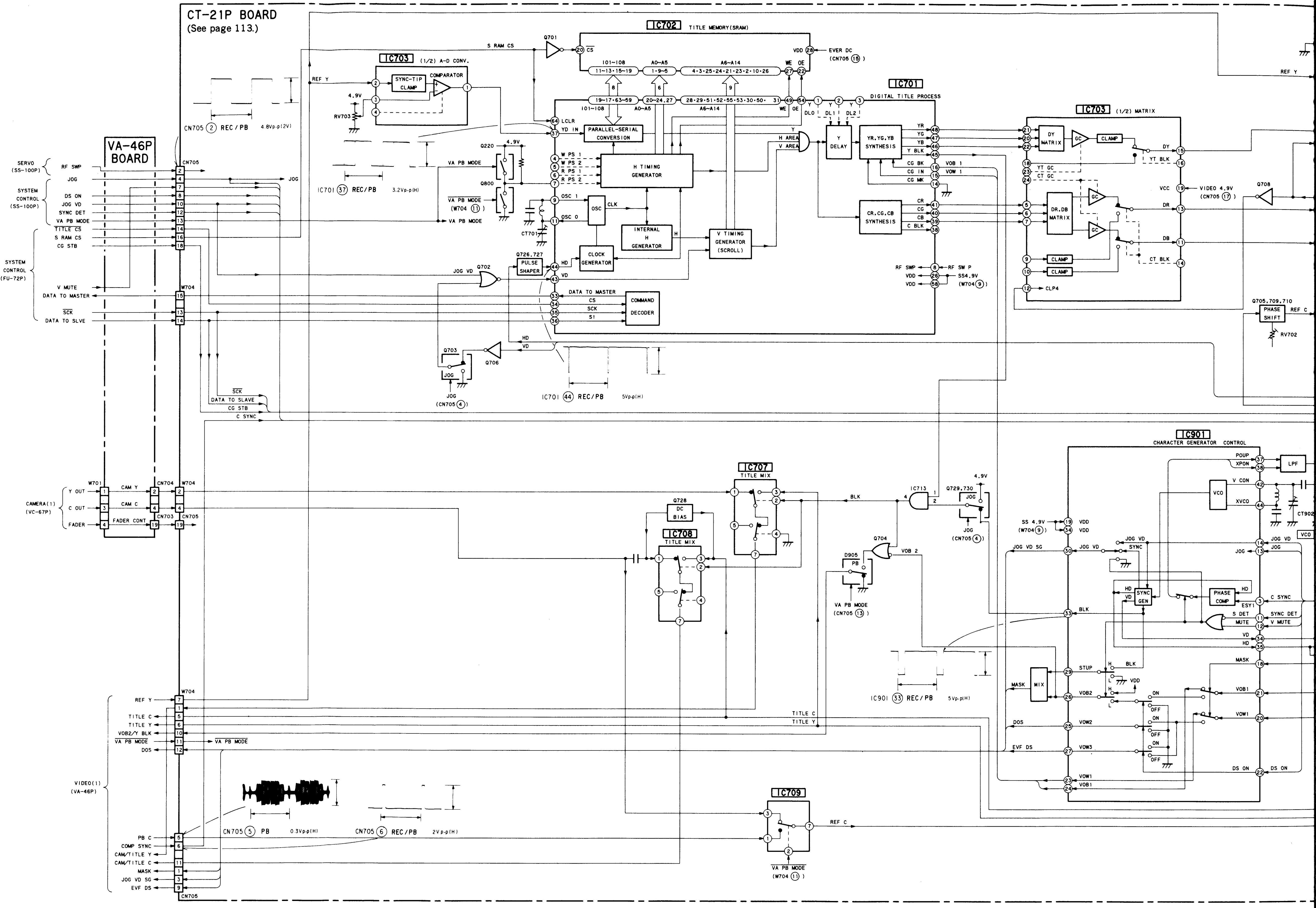
3-5. CAMERA (2) BLOCK DIAGRAM


IC509 (1/2) RGB SELECT
IC510 (1/4) AW COMPARATOR
IC501 CAMERA CONTROL
IC510 (1/4) BUFFER
IC510 (1/4) TRIANGLE WAVE FORMER
IC501 (1/4) CURRENT SOURCE
IC509 (1/2) DISCHARGE
IC505 (1/3) AE COMPARATOR
IC505 (1/3) TRIANGLE WAVE FORMER
IC505 (1/3) CURRENT SOURCE
IC507 DISCHARGE
IC502 DATA TRANSFER TIMING DECODER
IC504 EVR/D-A CONVERTER
IC508 VOLTAGE DETECT
IC656 (1/4) M IRIS CONT AMP
IC656 (1/4) BUFFER
IC656 (1/4) HALL OUT AMP
IC655 (1/2) AUTO/MANUAL SW
IC653 (1/2) VOLTAGE ERROR AMP
IC652 MOTOR DRIVE
IC653 (1/2) BUFFER
IC805 V REF
IC802 AUTO FOCUS DETE WINDOW
IC804 BUFFER
IC803 A-D CONVERTER
IC801 AUTO FOCUS DATA CONTROL
TRANSFER REGISTER
TIMING GENERATOR
DIGITAL INTEGRATOR
WINDOW GENERATOR
S/P CONV
ZOOM SW
WIDE
TELE
CAMERA(1) (CD-20P)
CN301
CN302
CN303
CN305
CN306
W801
JIG
SYSTEM CONTROL (VA-46)
VIDEO(1) (VA-46)
IC501 53 4.8Vp-p(H)
IC501 33 3.8Vp-p(8MHz)
IC801 9 4Vp-p(V)
IC801 33 0.8Vp-p(14.3MHz)
IC801 10 11 3.07Vp-p(V)
W801 3 1.4Vp-p(V)
(See page 109.) AF-54P BOARD
VC-67P BOARD (1/2) (See page 94.)

DIAGRAM

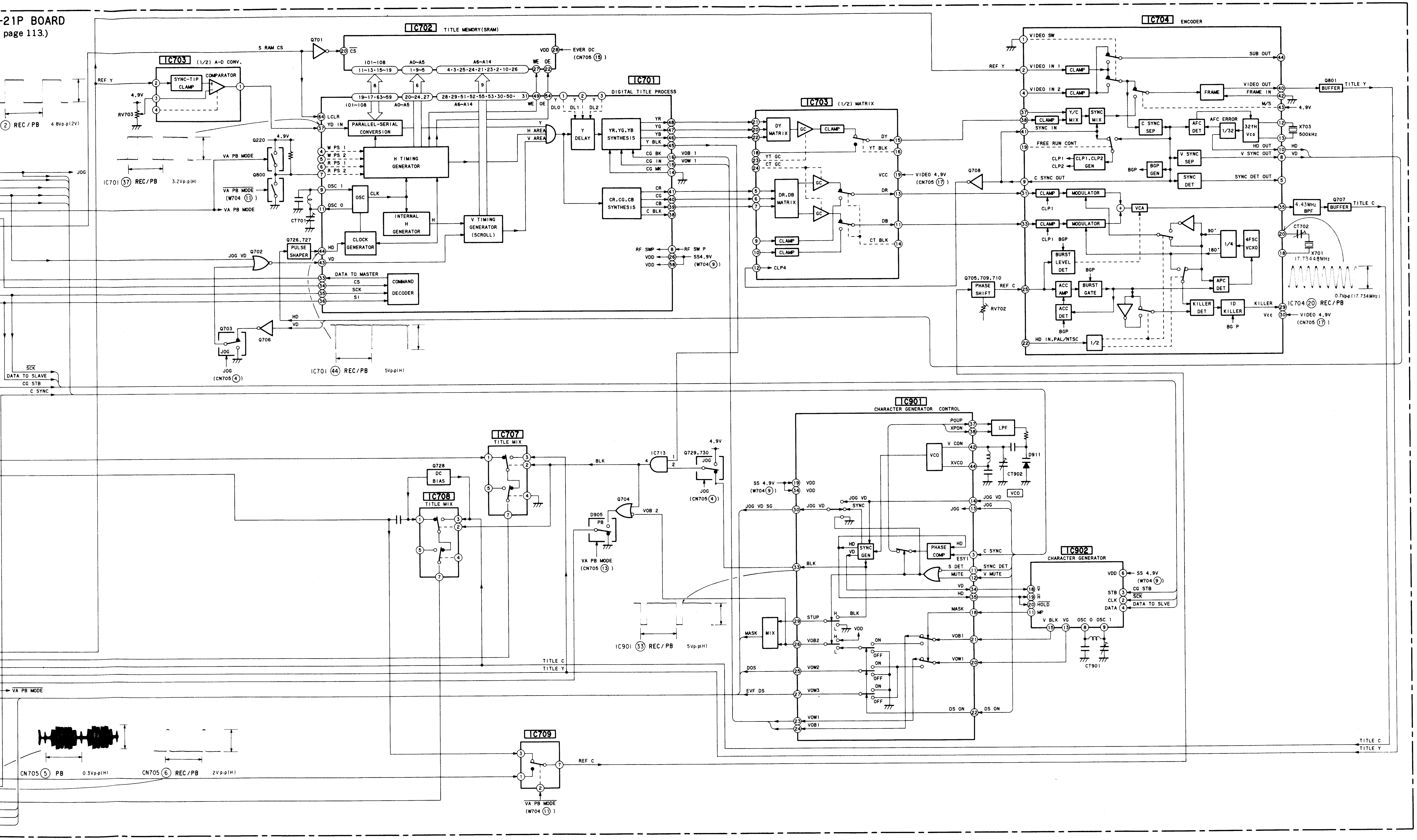

IC509 (1/2) RGB SELECT
BLANKING
INTEGRATOR
IC510 (1/4) AW COMPARATOR
Q506 (1/2)
IC501 CAMERA CONTROL
A/D REF(+)
A/D REF(−)
HALL SENS
AW IN
R SELECT
G SELECT
B SELECT
DISCHARGE
IC510 (1/4) BUFFER
IC510 (1/4) TRIANGLE WAVE FORMER
IC501 (1/4) CURRENT SOURCE
IC509 (1/2) DISCHARGE
Q516
AGC CONT
MAN GAIN
IC505 (1/3) AE COMPARATOR
Q515 INTEGRATOR
IC505 (1/3) TRIANGLE WAVE FORMER
IC505 (1/3) Q514 CURRENT SOURCE
IC507 DISCHARGE
X501 8MHz
CAM POWER
IC501 (33) 3.8Vp-p(8MHz)
IC501 (53) 4.8Vp-p(H)
FOCUS N
FOCUS ∞
ZOOM T
ZOOM W
MAN IRIS
EE LOCK
M IRIS
SENS DRIVE
ZOOM SENS
F SENS 1
F SENS 2
CAM CS
CAM SO
CAM SI
SCK
LANC IN
LANC OUT
RESET
CCD DET SW
ZOOM KEY
MODE B
VDD
IC504 EVR/D-A CONVERTER
IRES REF
AGC REF
HALL GAIN
HALL OS
FADER MODE
FADER
FOCUS SPEED
ZOOM SPEED
M IRIS CONT
M AGC CONT
SHUT LEV
Q517 BUFFER
IC508 VOLTAGE DETECT
D503
IC502 DATA TRANSFER TIMING DECODER
DECODE A
DECODE B
DECODE C
DECODE D
CAMERA(1)
FADER MODE
FADER
M AGC CONT
LD
EVR DATA
EVR CLK
Q502
Q504
D502
D501
Q501
Q503
AF CLK
IC656 (1/4) M IRIS CONT AMP
IC656 (1/4) BUFFER
IC656 (1/4) HALL OUT AMP
IC655 (1/2) AUTO/MANUAL SW
MAN
AUTO
M IRIS CONT
IRIS CONT
IRIS REF
HALL OUT
HALL OS
HALL GAIN
Q657 BUFFER
Q658 BUFFER
IC651 (1/2) IRIS DRIVE
IC651 (1/2) BIAS(+) CONTROL
REF 2V
CN651
DRIVE(+)
DRIVE(−)
CONT(+)
CONT(−)
BIAS(+)
HALL(−)
HALL(+)
BIAS(−)
IRIS MOTOR
IC656 Q655 (1/4) BIAS CURRENT CONTROL
CAM UNREG
Q651, 652 CURRENT LIMITER
Q653,654 5.5V REG
IC653 (1/2) VOLTAGE ERROR AMP
2.45V
IC652 MOTOR DRIVE
FOCUS 1
FOCUS 2
ZOOM T
ZOOM W
TP651
CN653
FOCUS MOTOR
CN652
ZOOM MOTOR
IC653 (1/2) BUFFER
Z SENS
Z SENS MATRIX
CN654
ZOOM POSITION SENSOR
CN655
FOCUS POSITION SENSOR
Q656 LED POWER REG&SW
LED POWER
LENS BLOCK
CN305
DATA TO MASTER
DATA TO SLAVE
LANC TO CAM
CAM TO LANC
SYSTEM CONTROL (VA-46)
SYSTEM RESET
AF DISPLAY
VIDEO(1) (VA-46)
(See page 109.)
AF-54P BOARD
IC801 (9) 4Vp-p(V)
IC801 (33) 0.8Vp-p(14.3MHz)
IC801 AUTO FOCUS DATA CONTROL
TRANS CLK
TRANSFER REGISTER
R810
CAM4.9V (W801 (2))
D801 RESET
SYS RST
TIMING GENERATOR
JIG
CN303
W801
AF DISP
DATA OUT
DATA IN
J CS
VD
HD
CLP4
AF CLK
AE WIND
Q806
ACLK IN
MCO
S/P CONV
AE CONT
IC801 (10)(11) 3.0Vp-p(V)
DIGITAL INTEGRATOR
A IN 1
A IN 2
A IN 3
A IN 4
A IN 5
A IN 6
A OUT
IC803 A-D CONVERTER
WINDOW GENERATOR
AE WIND
WIND DIS
WND S
WND B
WDRST
1/3
1-3CLK
REF 3.5V
REF 2V
REF 1V
IC805 V REF
IC802 AUTO FOCUS DET&WINDOW
FL851 FILTER
Q801 BUFFER
FL852 FILTER
Q802 BUFFER
MID OUT 1
MID OUT 2
MID IN 1
MID IN 2
GAIN1
GAIN2
IN 1
IN 2
CLAMP
DET
WINDOW B
WINDOW S
RST
OUT 1B
OUT 1S
OUT 2S
OUT 2B
CLP
VCC
WND B
WND S
RST
WD RST
IC804 BUFFER
Y LPF OUT (Q302)
Q808 BUFFER
Q807 BUFFER
Q806 BUFFER
HPF1
HPF2
W801 (3) 1.4Vp-p(V)
BOARD (1/2)
94.)

3-6. DIGITAL TITLER BLOCK DIAGRAM


CT-21P BOARD
(See page 113.)
VA-46P BOARD
SERVO (SS-100P)
RF SWP
JOG
SYSTEM CONTROL (SS-100P)
DS ON
JOG VD
SYNC DET
VA PB MODE
TITLE CS
S RAM CS
CG STB
SYSTEM CONTROL (FU-72P)
V MUTE
DATA TO MASTER
SCK
DATA TO SLVE
CN705
W704
IC703 (1/2) A-D CONV.
SYNC-TIP CLAMP
COMPARATOR
REF Y
4.9V
RV703
CN705 ② REC/PB 4.8Vp-p(2V)
IC701 ㊲ REC/PB 3.2Vp-p(H)
Q220
Q800
VA PB MODE
(W704 ⑪)
Q701
S RAM CS
IC702 TITLE MEMORY(SRAM)
CS
I01~I08
A0~A5
A6~A14
11~13·15~19
1·9~5
4·3·25·24·21·23·2·10·26
WE OE
VDD
EVER DC (CN705 ⑮)
19~17·63~59
20~24,27
28·29·51·52·55·53·30·50·31
IC701 DIGITAL TITLE PROCESS
DL0 DL1 DL2
LCLR
YD IN
PARALLEL-SERIAL CONVERSION
W PS 1
W PS 2
R PS 1
R PS 2
H TIMING GENERATOR
OSC 1
OSC 0
OSC
CLK
CT701
INTERNAL H GENERATOR
V TIMING GENERATOR (SCROLL)
CLOCK GENERATOR
Q726,727 PULSE SHAPER
HD
VD
JOG VD
Q702
DATA TO MASTER
CS
SCK
SI
COMMAND DECODER
H AREA
V AREA
Y DELAY
YR,YG,YB SYNTHESIS
YR YG YB Y BLK
CG BK
CG IN
CG MK
VOB 1
VOW 1
CR,CG,CB SYNTHESIS
CR CG CB C BLK
RF SWP
VDD
RF SW P
SS4.9V (W704 ⑨)
IC703 (1/2) MATRIX
DY MATRIX
GC
CLAMP
DY
YT BLK
YT GC
CT GC
VCC
VIDEO 4.9V (CN705 ⑰)
DR,DB MATRIX
DR
DB
CT BLK
CLP4
Q708
Q705,709,710 PHASE SHIFT
REF C
RV702
REF Y
Q703
JOG
Q706
JOG (CN705 ④)
IC701 ㊹ REC/PB 5Vp-p(H)
SCK
DATA TO SLAVE
CG STB
C SYNC
CAMERA(1) (VC-67P)
Y OUT
C OUT
FADER
W701
CAM Y
CAM C
FADER CONT
CN704
CN703
IC707 TITLE MIX
Q728 DC BIAS
IC708 TITLE MIX
BLK
IC713
Q729,730
JOG (CN705 ④)
4.9V
Q704
VOB 2
D905 PB
VA PB MODE (CN705 ⑬)
IC901 ㉝ REC/PB 5Vp-p(H)
IC901 CHARACTER GENERATOR CONTROL
POUP
XPON
LPF
V CON
VCO
XVCO
CT902
SS 4.9V (W704 ⑨)
VDD
JOG VD SG
JOG VD
SYNC
JOG
SYNC GEN
PHASE COMP
C SYNC
ESY1
S DET
MUTE
SYNC DET
V MUTE
HD
VD
MASK
STUP
BLK
MIX
VOB2
VOW2
VOW3
VOB1
VOW1
ON
OFF
DOS
EVF DS
DS ON
VIDEO(1) (VA-46P)
REF Y
TITLE C
TITLE Y
VOB2/Y BLK
VA PB MODE
DOS
PB C
COMP SYNC
CAM/TITLE Y
CAM/TITLE C
MASK
JOG VD SG
EVF DS
CN705 ⑤ PB 0.3Vp-p(H)
CN705 ⑥ REC/PB 2Vp-p(H)
IC709
REF C
VA PB MODE (W704 ⑪)

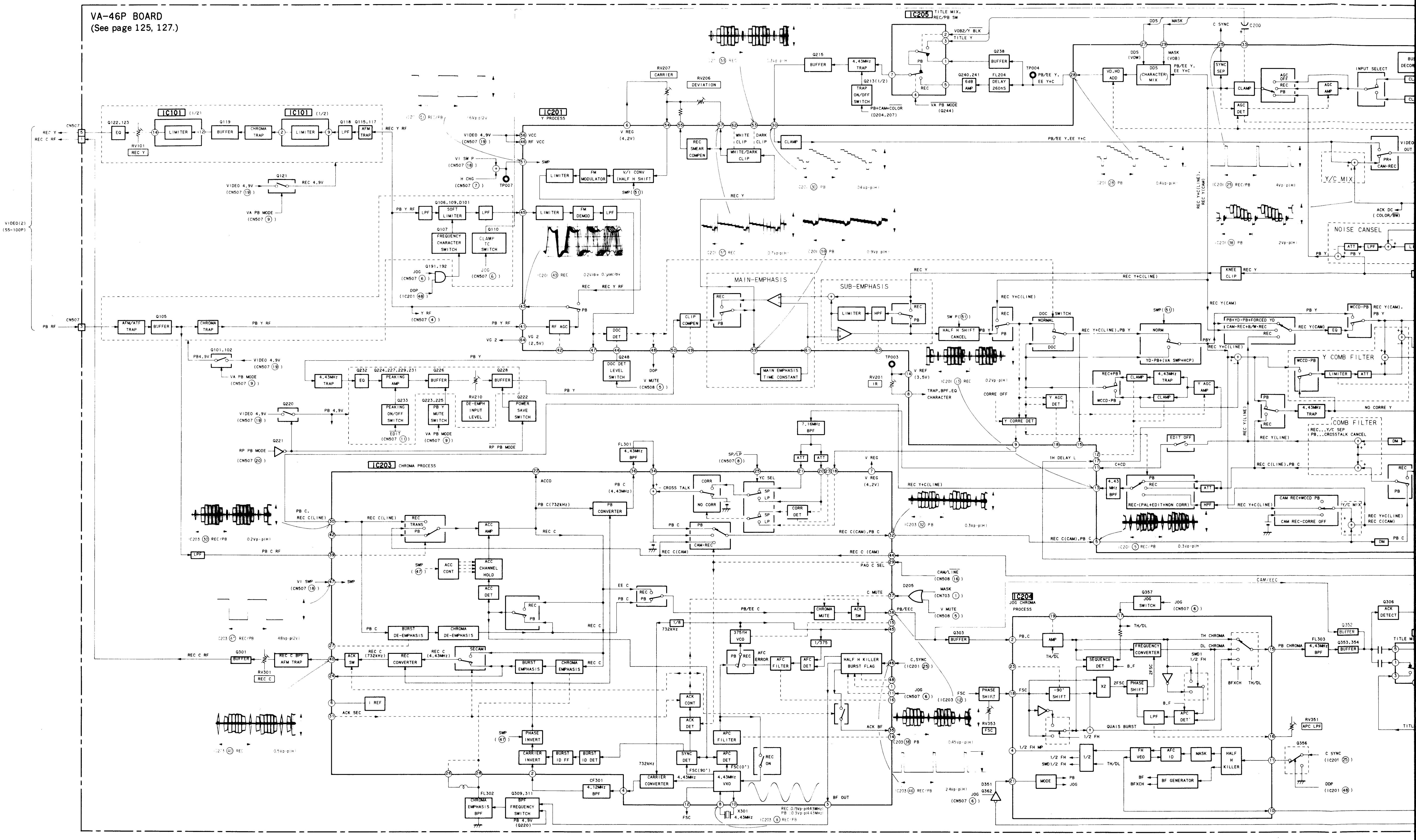
RAM

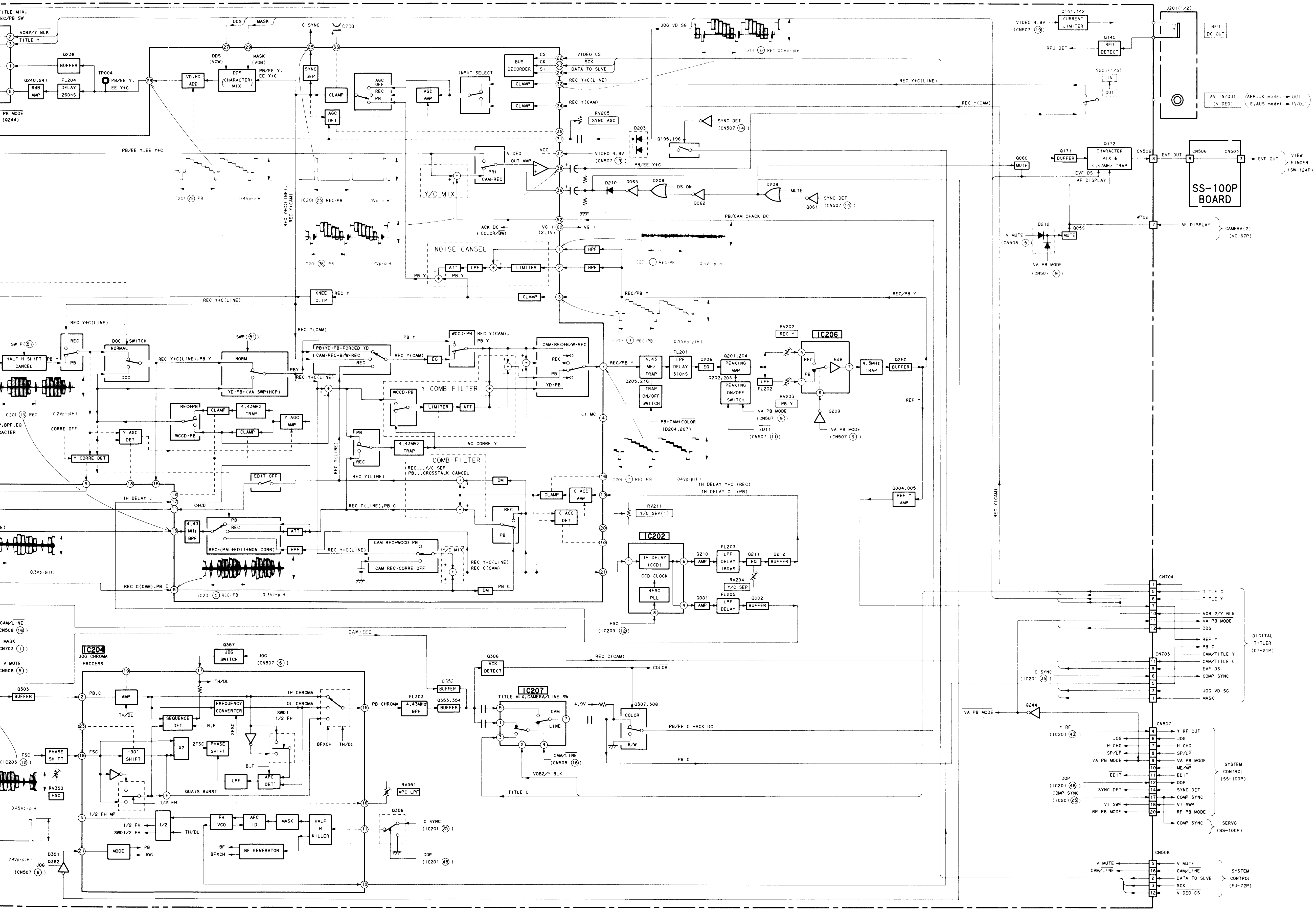
-21P BOARD
page 113.)



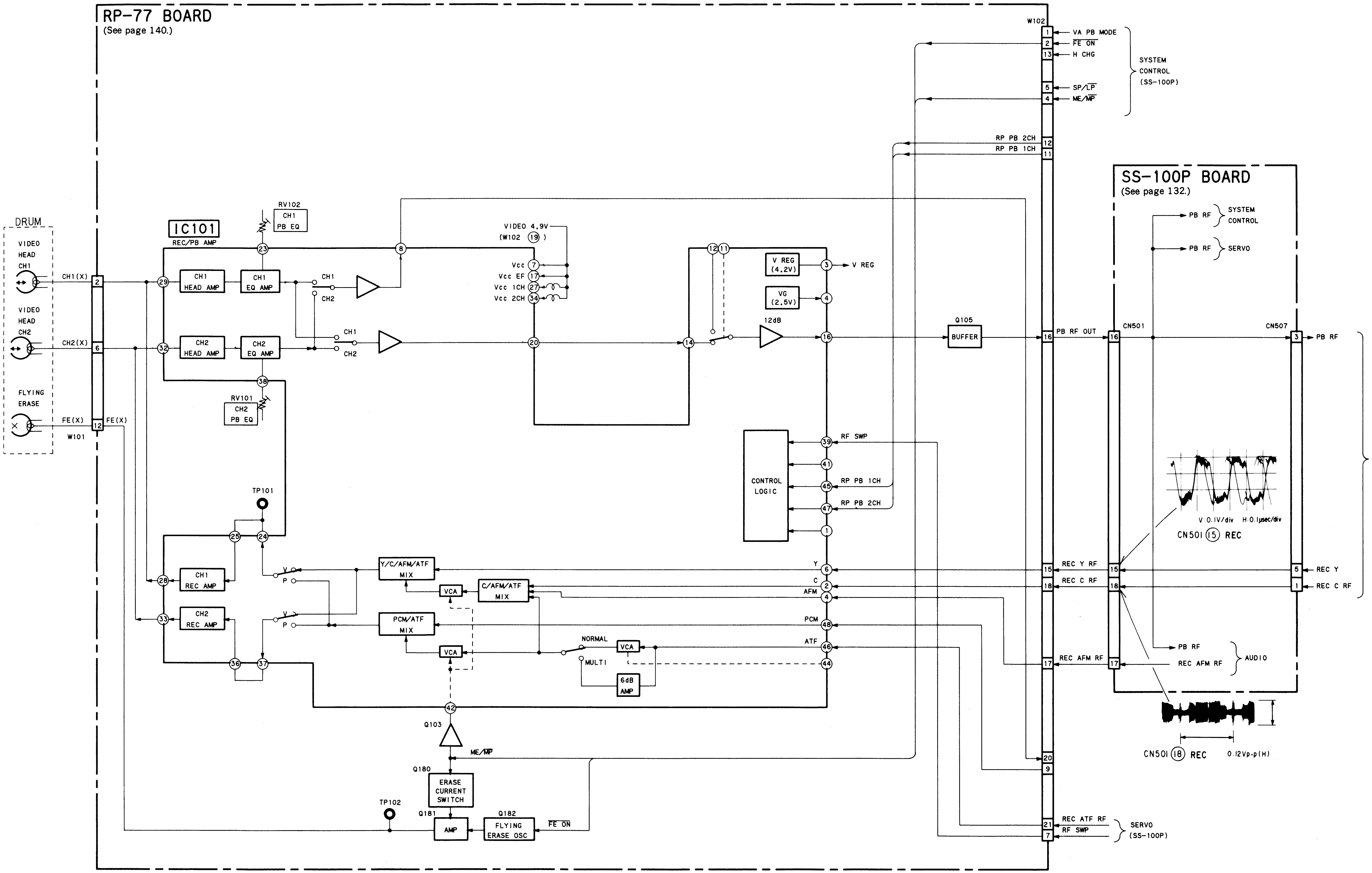
IC702 TITLE MEMORY(SRAM)
IC703 (1/2) A-D CONV.
SYNC-TIP CLAMP
COMPARATOR
IC701 DIGITAL TITLE PROCESS
PARALLEL-SERIAL CONVERSION
H TIMING GENERATOR
OSC
INTERNAL H GENERATOR
V TIMING GENERATOR (SCROLL)
CLOCK GENERATOR
COMMAND DECODER
PULSE SHAPER
Y DELAY
YR,YG,YB SYNTHESIS
CR,CG,CB SYNTHESIS
IC703 (1/2) MATRIX
DY MATRIX
DR,DB MATRIX
GC
CLAMP
IC704 ENCODER
VIDEO SW
VIDEO IN 1
VIDEO IN 2
SUB OUT
VIDEO OUT
FRAME IN
FRAME
M/S
Y/C MIX
SYNC MIX
SYNC IN
C SYNC SEP
AFC DET
AFC ERROR
1/32
32fH Vco
X703 500kHz
HD OUT
V SYNC OUT
V SYNC SEP
SYNC DET OUT
SYNC DET
FREE RUN CONT
CLP1,CLP2 GEN
BGP GEN
C SYNC OUT
MODULATOR
VCA
4.43MHz BPF
90°
180°
1/4
4FSC VCXO
X701 17.734MHz
BURST LEVEL DET
ACC AMP
BURST GATE
ACC DET
APC DET
KILLER DET
ID KILLER
PHASE SHIFT
RV702
HD IN.PAL/NTSC
1/2
Q801 BUFFER
TITLE Y
Q707 BUFFER
TITLE C
Q708
Q705,709,710
REF Y
REF C
IC704 ⑳ REC/PB
0.7Vp-p(17.734MHz)
VIDEO 4.9V (CN705 ⑰)
S RAM CS
Q701
EVER DC (CN705 ⑮)
REF Y
4.9V
RV703
② REC/PB 4.8Vp-p(2V)
Q220
Q800
VA PB MODE
VA PB MODE (W704 ⑪)
IC701 ㊲ REC/PB 3.2Vp-p(H)
JOG
JOG VD
Q702
Q726,727
CT701
DATA TO MASTER
CS
SCK
SI
Q703
Q706
JOG (CN705 ④)
IC701 ㊹ REC/PB 5Vp-p(H)
SCK
DATA TO SLAVE
CG STB
C SYNC
RF SWP
RF SW P
SS4.9V (W704 ⑨)
VOB 1
VOW 1
IC901 CHARACTER GENERATOR CONTROL
POUP
XPON
LPF
VCO
V CON
XVCO
D911
CT902
SS 4.9V (W704 ⑨)
JOG VD SG
JOG VD
SYNC
SYNC GEN
PHASE COMP
ESY1
S DET
MUTE
SYNC DET
V MUTE
BLK
STUP
MASK
MIX
VOB2
VOB1
VOW1
VOW2
VOW3
DOS
EVF DS
DS ON
ON
OFF
IC902 CHARACTER GENERATOR
CG STB
SCK
DATA TO SLVE
HOLD
MP
V BLK
VG
OSC 0
OSC 1
CT901
IC713
Q729,730
JOG (CN705 ④)
Q704
VOB 2
D905 PB
VA PB MODE (CN705 ⑬)
IC901 ㉝ REC/PB 5Vp-p(H)
IC707 TITLE MIX
IC708 TITLE MIX
Q728 DC BIAS
IC709
VA PB MODE (W704 ⑪)
CN705 ⑤ PB 0.3Vp-p(H)
CN705 ⑥ REC/PB 2Vp-p(H)
TITLE C
TITLE Y

3-7. VIDEO (1) BLOCK DIAGRAM

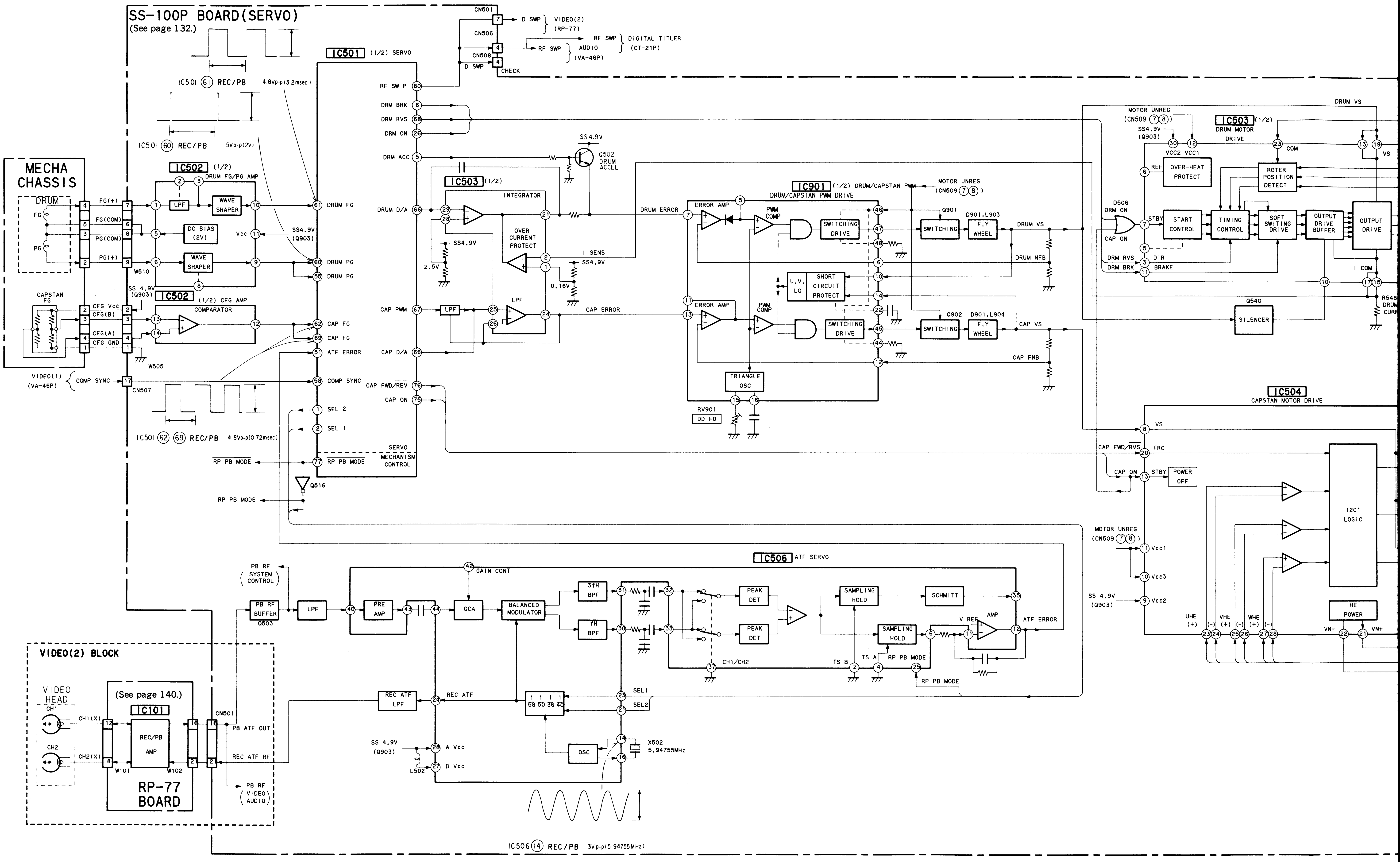

VA-46P BOARD
(See page 125, 127.)
VIDEO(2)
(55-100P)
CN507
REC Y
REC C RF
PB RF
IC101 (1/2)
Q122,123
EQ
RV101
REC Y
LIMITER
Q119
BUFFER
CHROMA TRAP
Q118 Q115,117
LPF
AFM TRAP
REC Y RF
Q121
REC 4.9V
VIDEO 4.9V
VA PB MODE
IC201
Y PROCESS
VCC
RF VCC
SWP
V1 SW P
H CHG
TP007
LIMITER
FM MODULATOR
V/I CONV (HALF H SHIFT)
Q106,109,D101
PB Y RF
LPF
SOFT LIMITER
Q107
FREQUENCY CHARACTER SWITCH
Q110
CLAMP TC SWITCH
Q191,192
JOG
DDP
FM DEMOD
AFM/ATF TRAP
Q105
BUFFER
CHROMA TRAP
RF AGC
VG 2 (2.5V)
DOC DET
Q248
DOC DET LEVEL SWITCH
DDP
V MUTE
Q101,102
PB4.9V
Q232 Q224,227,229,231 Q226 Q228
4.43MHz TRAP
EQ
PEAKING AMP
BUFFER
RV210
BUFFER
Q233
PEAKING ON/OFF SWITCH
EDIT
Q223,225
PB Y MUTE SWITCH
DE-EMPH INPUT LEVEL
Q222
POWER SAVE SWITCH
Q220
Q221
RP PB MODE
RV207
CARRIER
RV206
DEVIATION
V REG (4.2V)
REC SMEAR COMPEN
WHITE CLIP
DARK CLIP
WHITE/DARK CLIP
CLAMP
REC Y
CLIP COMPEN
MAIN-EMPHASIS
SUB-EMPHASIS
LIMITER
HPF
MAIN EMPHASIS TIME CONSTANT
TP003
V REF (3.5V)
RV201
IR
TRAP, BPF, EQ CHARACTER
HALF H SHIFT CANCEL
SW P
Q215
BUFFER
4.43MHz TRAP
Q213(1/2)
TRAP ON/OFF SWITCH
PB+CAM+COLOR (D204,207)
IC205
TITLE MIX, REC/PB SW
VOB2/Y BLK
TITLE Y
Q238
BUFFER
Q240,241
6dB AMP
FL204
DELAY 260nS
TP004
PB/EE Y, EE Y+C
VA PB MODE (Q244)
VD,HD ADD
DDS
MASK
DDS (CHARACTER) MIX
C SYNC
SYNC SEP
CLAMP
AGC DET
AGC OFF
AGC AMP
INPUT SELECT
Y/C MIX
PB+CAM+REC
ACK DC (COLOR/BW)
NOISE CANSEL
ATT
LPF
KNEE CLIP
REC Y+C(LINE)
DOC SWITCH
NORMAL
NORM
YD·PB+(VA SWP+HCP)
REC+PB
CLAMP
4.43MHz TRAP
WCCD·PB
Y AGC DET
Y AGC AMP
Y CORRE DET
CORRE OFF
Y COMB FILTER
LIMITER
NO CORRE Y
COMB FILTER
REC...Y/C SEP
PB...CROSSTALK CANCEL
EDIT OFF
REC Y(LINE)
REC C(LINE),PB C
1H DELAY L
C+CD
4.43MHz BPF
REC·(PAL+EDIT+NON CORR)
HPF
CAM REC+WCCD PB
CAM REC·CORRE OFF
DM
REC C(CAM),PB C
7.16MHz BPF
ATT
SP/LP
YC SEL
CROSS TALK
CORR
NO CORR
CORR DET
CAM+REC
IC203
CHROMA PROCESS
FL301
4.43MHz BPF
ACCO
PB C (4.43MHz)
PB C(732kHz)
PB CONVERTER
REC C(LINE)
REC TRANS
ACC AMP
REC C
PB C RF
LPF
SWP
ACC CONT
ACC CHANNEL HOLD
ACC DET
EE C
REC C(CAM)
PAO C SEL
C MUTE
PB/EE C
CHROMA MUTE
ACK SW
BURST DE-EMPHASIS
CHROMA DE-EMPHASIS
Q301
BUFFER
REC C BPF AFM TRAP
RV301
ACK SW
REC CONVERTER
SECAM
BURST EMPHASIS
CHROMA EMPHASIS
I REF
ACK SEC
PHASE INVERT
CARRIER INVERT
BURST 1D FF
BURST 1D DET
375fH VCO
1/8
732kHz
AFC ERROR
AFC FILTER
AFC DET
1/375
HALF H KILLER BURST FLAG
ACK CONT
ACK DET
APC FILITER
SYNC DET
APC DET
REC ON
CARRIER CONVERTER
4.43MHz VXO
FSC(90°)
FSC(0°)
CF301
4.12MHz BPF
FL302
CHROMA EMPHASIS BPF
Q309,311
BPF FREQUENCY SWITCH
PB 4.9V (Q220)
X301 4.43MHz
FSC
BF OUT
CAM/LINE
D205
MASK
V MUTE
C.SYNC
IC204
JOG CHROMA PROCESS
Q357
JOG SWITCH
TH/DL
Q303
BUFFER
PB,C
AMP
SEQUENCE DET
FREQUENCY CONVERTER
TH CHROMA
DL CHROMA
SWD1 1/2 FH
X2
2FSC
PHASE SHIFT
-90° SHIFT
PHASE SHIFT
RV353
FSC
LPF
APC DET
QUAIS BURST
1/2 FH
1/2 FH MP
1/2
FH VCO
AFC 1D
MASK
HALF H KILLER
MODE
BF GENERATOR
BFXCH
D351 Q362
Q352 BUFFER
FL303 4.43MHz BPF
Q353,354 BUFFER
PB CHROMA
Q306 ACK DETECT
RV351 APC LPF
Q356
CAM/EEC
TITLE

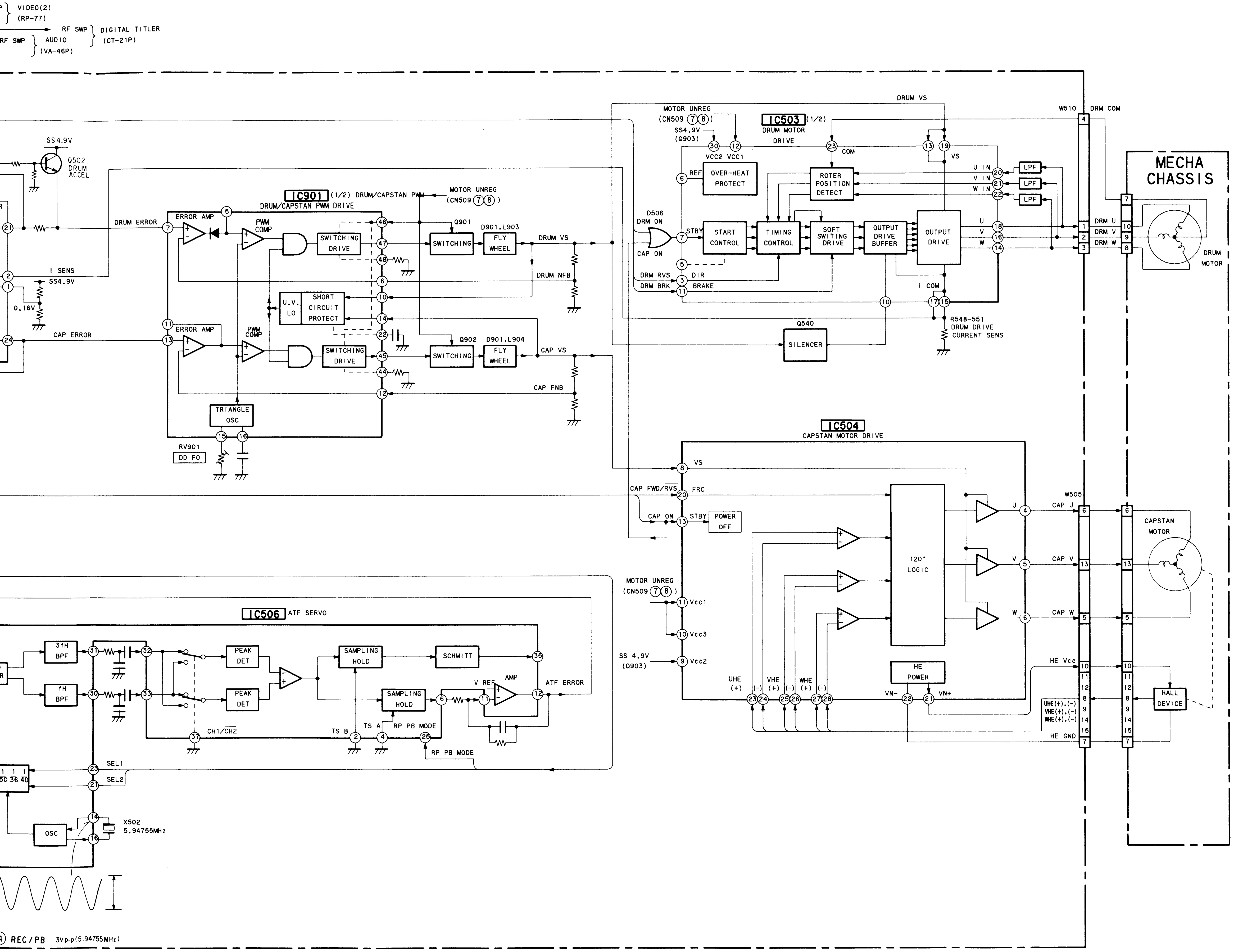

IC206
IC202
IC204
JOG CHROMA PROCESS
IC207
TITLE MIX,CAMERA/LINE SW
SS-100P BOARD
NOISE CANSEL
Y/C MIX
Y COMB FILTER
COMB FILTER
REC...Y/C SEP
PB...CROSSTALK CANCEL
INPUT SELECT
BUS DECORDER
AGC OFF
AGC AMP
AGC DET
CLAMP
SYNC SEP
DDS CHARACTER MIX
VD,HD ADD
BUFFER
DELAY 260nS
6dB AMP
TP004
PB/EE Y, EE Y+C
VIDEO OUT AMP
PR+CAM+REC
LIMITER
LPF
ATT
HPF
KNEE CLIP
HALF H SHIFT CANCEL
DOC SWITCH
NORMAL
DOC
NORM
YD+PB+(VA SWP+HCP)
4.43MHz TRAP
Y AGC AMP
Y AGC DET
Y CORRE DET
CORRE OFF
EDIT OFF
4.43 MHz BPF
REC+(PAL+EDIT+NON CORR)
CAM REC+WCCD PB
CAM REC+CORRE OFF
C ACC AMP
C ACC DET
1H DELAY (CCD)
CCD CLOCK
4FSC PLL
LPF DELAY 180nS
LPF DELAY 310nS
PEAKING AMP
PEAKING ON/OFF SWITCH
TRAP ON/OFF SWITCH
4.5MHz TRAP
REF Y AMP
CURRENT LIMITER
RFU DETECT
CHARACTER MIX & 4.43MHz TRAP
MUTE
AV IN/OUT (VIDEO)
(AEP,UK model → OUT)
(E,AUS model → IN/OUT)
VIEW FINDER (SW-124P)
CAMERA(2) (VC-67P)
DIGITAL TITLER (CT-21P)
SYSTEM CONTROL (SS-100P)
SERVO (SS-100P)
SYSTEM CONTROL (FU-72P)
J201(1/2)
RFU DC OUT
S201(1/3)
CN506
CN503
CN704
CN703
CN507
CN508
JOG SWITCH
ACK DETECT
4.43MHz BPF
AMP
SEQUENCE DET
FREQUENCY CONVERTER
X2
PHASE SHIFT
-90° SHIFT
APC DET
FH VCO
AFC ID
MASK
HALF H KILLER
BF GENERATOR
MODE
COLOR
B/W
CAM
LINE
TITLE C
TITLE Y
VOB 2/Y BLK
VA PB MODE
DDS
REF Y
PB C
CAM/TITLE Y
CAM/TITLE C
EVF DS
COMP SYNC
JOG VD SG
Y RF
JOG
H CHG
SP/LP
ME/MP
EDIT
DOP
SYNC DET
VI SWP
RP PB MODE
V MUTE
CAM/LINE
DATA TO SLVE
SCK
VIDEO CS

3-8. VIDEO (2) BLOCK DIAGRAM

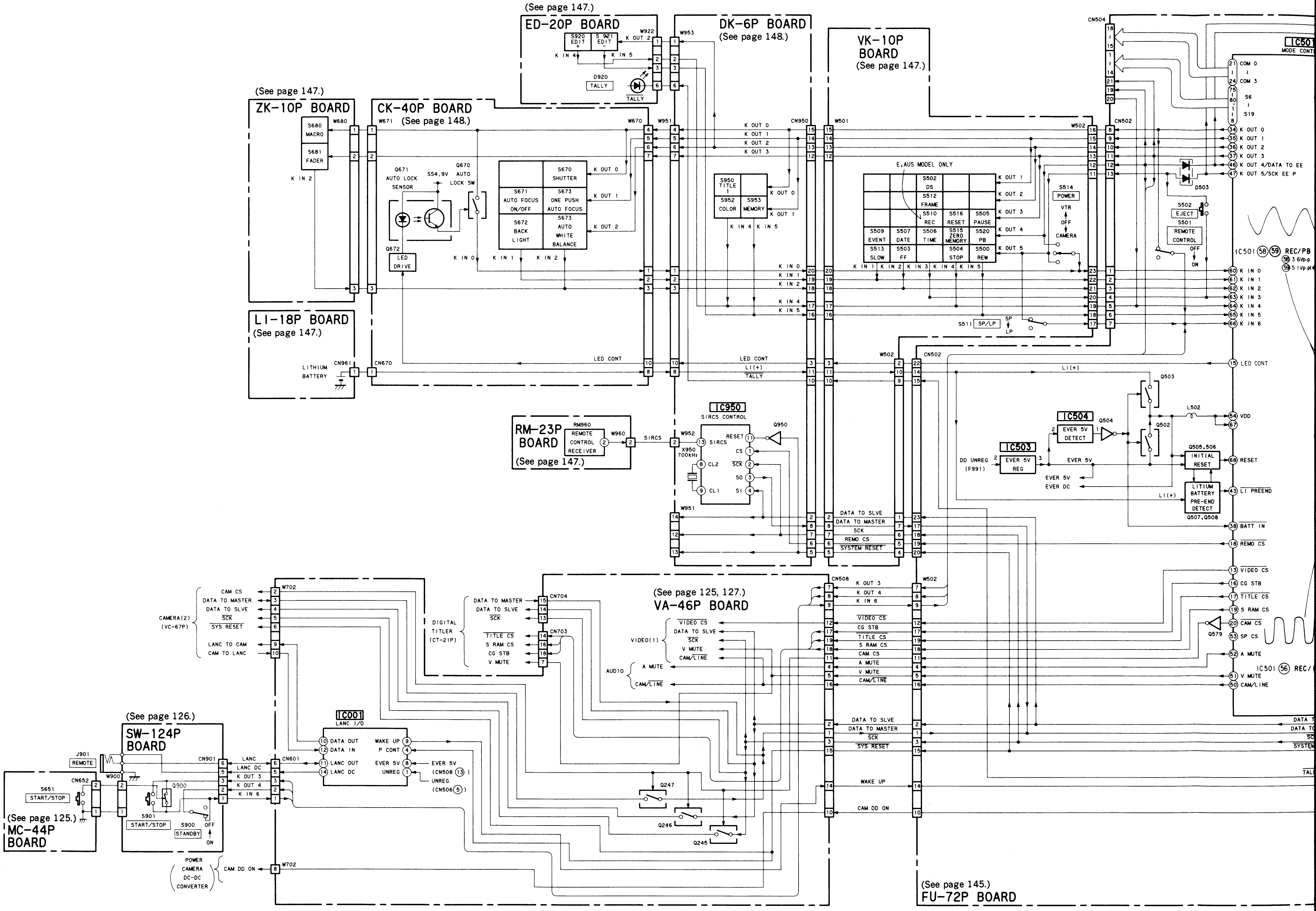

RP-77 BOARD
(See page 140.)
SS-100P BOARD
(See page 132.)
DRUM
VIDEO HEAD CH1
VIDEO HEAD CH2
FLYING ERASE
CH1(X)
CH2(X)
FE(X)
W101
IC101
REC/PB AMP
RV102
CH1 PB EQ
RV101
CH2 PB EQ
CH1 HEAD AMP
CH1 EQ AMP
CH2 HEAD AMP
CH2 EQ AMP
CH1
CH2
VIDEO 4.9V
(W102 ⑲)
Vcc
Vcc EF
Vcc 1CH
Vcc 2CH
V REG (4.2V)
VG (2.5V)
V REG
12dB
Q105
BUFFER
PB RF OUT
CONTROL LOGIC
RF SWP
RP PB 1CH
RP PB 2CH
TP101
CH1 REC AMP
CH2 REC AMP
Y/C/AFM/ATF MIX
C/AFM/ATF MIX
PCM/ATF MIX
VCA
NORMAL
MULTI
6dB AMP
Y
C
AFM
PCM
ATF
Q103
ME/MP
Q180
ERASE CURRENT SWITCH
TP102
Q181
AMP
Q182
FLYING ERASE OSC
FE ON
W102
VA PB MODE
FE ON
H CHG
SP/LP
ME/MP
SYSTEM CONTROL (SS-100P)
RP PB 2CH
RP PB 1CH
REC Y RF
REC C RF
REC AFM RF
REC ATF RF
RF SWP
SERVO (SS-100P)
CN501
CN507
PB RF
SYSTEM CONTROL
SERVO
AUDIO
REC AFM RF
REC Y
REC C RF
VIDEO(1) (VA-46P)
V:0.1V/div H:0.1μsec/div
CN501 ⑮ REC
CN501 ⑱ REC
0.12Vp-p(H)

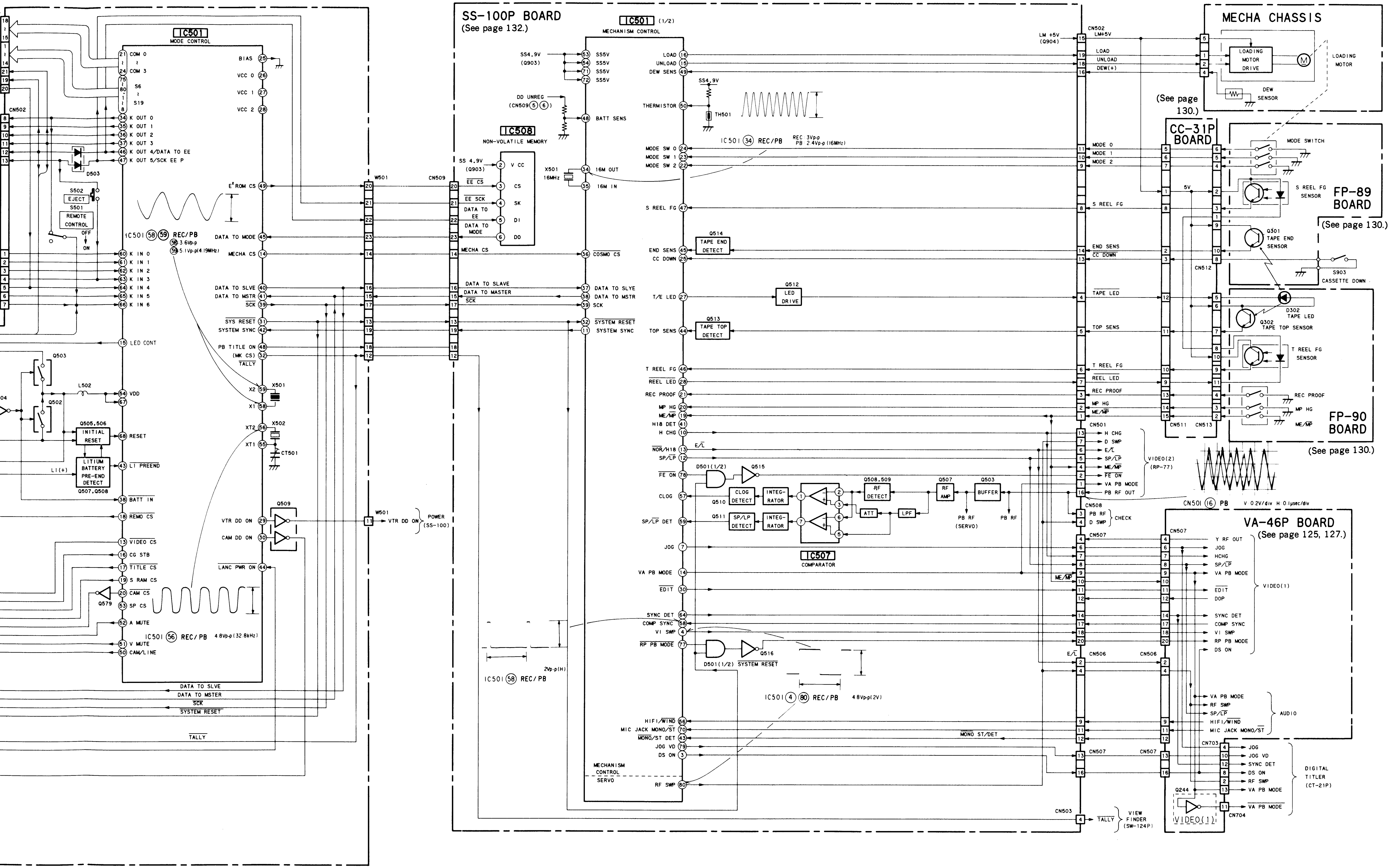
3-9. SERVO BLOCK DIAGRAM


SS-100P BOARD (SERVO)
(See page 132.)
IC501 (1/2) SERVO
IC501 (61) REC/PB 4.8Vp-p(3.2msec)
IC501 (60) REC/PB 5Vp-p(2V)
IC501 (62) (69) REC/PB 4.8Vp-p(0.72msec)
MECHA CHASSIS
DRUM
FG
PG
CAPSTAN FG
FG(+)
FG(COM)
PG(COM)
PG(+)
CFG Vcc
CFG(B)
CFG(A)
CFG GND
W510
W505
IC502 (1/2) DRUM FG/PG AMP
LPF
WAVE SHAPER
DC BIAS (2V)
Vcc
SS4.9V (Q903)
IC502 (1/2) CFG AMP
COMPARATOR
VIDEO(1) (VA-46P)
COMP SYNC
CN507
CN501
CN506
CN508
D SWP
VIDEO(2) (RP-77)
RF SWP
AUDIO (VA-46P)
DIGITAL TITLER (CT-21P)
CHECK
RF SW P
DRM BRK
DRM RVS
DRM ON
DRM ACC
DRUM FG
DRUM PG
CAP FG
ATF ERROR
COMP SYNC
SEL 2
SEL 1
RP PB MODE
SERVO MECHANISM CONTROL
Q516
DRUM D/A
CAP PWM
CAP D/A
CAP FWD/REV
CAP ON
SS4.9V
Q502 DRUM ACCEL
IC503 (1/2)
INTEGRATOR
OVER CURRENT PROTECT
I SENS
2.5V
0.16V
CAP ERROR
DRUM ERROR
IC901 (1/2) DRUM/CAPSTAN PWM DRIVE
ERROR AMP
PWM COMP
SWITCHING DRIVE
U.V. LO
SHORT CIRCUIT PROTECT
TRIANGLE OSC
RV901 DD FO
MOTOR UNREG (CN509 (7)(8))
Q901
Q902
D901, L903
D901, L904
SWITCHING
FLY WHEEL
DRUM VS
DRUM NFB
CAP VS
CAP FNB
IC503 (1/2) DRUM MOTOR DRIVE
MOTOR UNREG (CN509 (7)(8))
SS4.9V (Q903)
VCC2 VCC1
COM
VS
REF
OVER-HEAT PROTECT
ROTER POSITION DETECT
D506
DRM ON
CAP ON
STBY
START CONTROL
TIMING CONTROL
SOFT SWITING DRIVE
OUTPUT DRIVE BUFFER
OUTPUT DRIVE
DIR
BRAKE
DRM RVS
DRM BRK
I COM
R548 DRUM CURR
Q540 SILENCER
IC504 CAPSTAN MOTOR DRIVE
VS
CAP FWD/RVS
FRC
STBY
POWER OFF
120° LOGIC
Vcc1
Vcc3
Vcc2
SS 4.9V (Q903)
UHE (+) (-)
VHE (+) (-)
WHE (+) (-)
HE POWER
VN-
VN+
IC506 ATF SERVO
PB RF (SYSTEM CONTROL)
PB RF BUFFER Q503
LPF
PRE AMP
GCA
GAIN CONT
BALANCED MODULATOR
3fH BPF
fH BPF
PEAK DET
SAMPLING HOLD
SCHMITT
AMP
V REF
ATF ERROR
CH1/CH2
TS A
TS B
RP PB MODE
REC ATF LPF
REC ATF
SEL1
SEL2
1 1 1 1
58 50 36 40
OSC
X502 5.94755MHz
SS 4.9V (Q903)
A Vcc
D Vcc
L502
IC506 (14) REC/PB 3Vp-p(5.94755MHz)
VIDEO(2) BLOCK
VIDEO HEAD
CH1
CH2
CH1(X)
CH2(X)
(See page 140.)
IC101
REC/PB AMP
W101
W102
RP-77 BOARD
CN501
PB ATF OUT
REC ATF RF
PB RF (VIDEO AUDIO)


VIDEO(2)
(RP-77)
RF SWP
DIGITAL TITLER
(CT-21P)
RF SWP
AUDIO
(VA-46P)
SS4.9V
Q502
DRUM
ACCEL
DRUM ERROR
I SENS
SS4.9V
0.16V
CAP ERROR
IC901 (1/2) DRUM/CAPSTAN PWM
DRUM/CAPSTAN PWM DRIVE
MOTOR UNREG
(CN509 ⑦⑧)
ERROR AMP
PWM COMP
SWITCHING DRIVE
Q901
SWITCHING
D901,L903
FLY WHEEL
DRUM VS
DRUM NFB
U.V. LO
SHORT CIRCUIT PROTECT
Q902
D901,L904
CAP VS
CAP FNB
TRIANGLE OSC
RV901
DD FO
MOTOR UNREG
(CN509 ⑦⑧)
SS4.9V
(Q903)
VCC2 VCC1
IC503 (1/2)
DRUM MOTOR DRIVE
DRUM VS
COM
VS
REF
OVER-HEAT PROTECT
ROTER POSITION DETECT
U IN
V IN
W IN
LPF
D506
DRM ON
CAP ON
STBY
START CONTROL
TIMING CONTROL
SOFT SWITING DRIVE
OUTPUT DRIVE BUFFER
OUTPUT DRIVE
U
V
W
DRM RVS
DRM BRK
DIR
BRAKE
I COM
Q540
SILENCER
R548-551
DRUM DRIVE
CURRENT SENS
W510
DRM COM
DRM U
DRM V
DRM W
MECHA CHASSIS
DRUM MOTOR
IC504
CAPSTAN MOTOR DRIVE
VS
CAP FWD/RVS
FRC
CAP ON
STBY
POWER OFF
MOTOR UNREG
(CN509 ⑦⑧)
Vcc1
Vcc3
SS 4.9V
(Q903)
Vcc2
120° LOGIC
HE POWER
UHE (+) (-)
VHE (+) (-)
WHE (+) (-)
VN-
VN+
W505
CAP U
CAP V
CAP W
HE Vcc
UHE(+),(-)
VHE(+),(-)
WHE(+),(-)
HE GND
CAPSTAN MOTOR
HALL DEVICE
IC506 ATF SERVO
3fH BPF
fH BPF
PEAK DET
SAMPLING HOLD
SCHMITT
V REF
AMP
ATF ERROR
CH1/CH2
TS B
TS A
RP PB MODE
SEL1
SEL2
OSC
X502
5.94755MHz
REC/PB 3Vp-p(5.94755MHz)

3-10. SYSTEM CONTROL BLOCK DIAGRAM


(See page 147.)
ED-20P BOARD
S920 EDIT +
S921 EDIT −
K OUT 2
K IN 4
K IN 5
D920 TALLY
TALLY
W922
W953
DK-6P BOARD
(See page 148.)
VK-10P BOARD
(See page 147.)
(See page 147.)
ZK-10P BOARD
S680 MACRO
S681 FADER
K IN 2
W680
CK-40P BOARD
(See page 148.)
W671
Q671 AUTO LOCK SENSOR
S54.9V
Q670 AUTO LOCK SW
Q672 LED DRIVE
S670 SHUTTER
S671 AUTO FOCUS ON/OFF
S673 ONE PUSH AUTO FOCUS
S672 BACK LIGHT
S673 AUTO WHITE BALANCE
K OUT 0
K OUT 1
K OUT 2
K OUT 3
K IN 0
K IN 1
K IN 2
W670
W951
CN950
S950 TITLE
S952 COLOR
S953 MEMORY
K IN 4
K IN 5
W501
E,AUS MODEL ONLY
S502 DS
S512 FRAME
S510 REC
S516 RESET
S505 PAUSE
S509 EVENT
S507 DATE
S506 TIME
S515 ZERO MEMORY
S520 PB
S513 SLOW
S503 FF
S504 STOP
S500 REW
S514 POWER
VTR
OFF
CAMERA
S511 SP/LP
SP
LP
W502
CN502
CN504
D503
S502 EJECT
S501 REMOTE CONTROL
OFF
ON
IC501 MODE CONTROL
COM 0
COM 3
S6
S19
K OUT 4/DATA TO EE
K OUT 5/SCK EE P
IC501 (58) (59) REC/PB
(58) 3.6Vp-p
(59) 5.1Vp-p
LI-18P BOARD
(See page 147.)
LITHIUM BATTERY
CN961
CN670
LED CONT
LI(+)
TALLY
RM-23P BOARD
(See page 147.)
RM960 REMOTE CONTROL RECEIVER
W960
SIRCS
W952
IC950 SIRCS CONTROL
X950 700kHz
CL2
CL1
RESET
CS
SCK
SO
SI
Q950
Q503
Q502
Q504
L502
IC504 EVER 5V DETECT
IC503 EVER 5V REG
DD UNREG (F991)
EVER 5V
EVER DC
Q505,506 INITIAL RESET
LITHIUM BATTERY PRE-END DETECT
Q507,Q508
VDD
RESET
LI PREEND
BATT IN
REMO CS
DATA TO SLVE
DATA TO MASTER
SCK
REMO CS
SYSTEM RESET
VIDEO CS
CG STB
TITLE CS
S RAM CS
CAM CS
SP CS
Q579
A MUTE
V MUTE
CAM/LINE
IC501 (56) REC/
CAMERA(2) (VC-67P)
CAM CS
DATA TO MASTER
DATA TO SLVE
SCK
SYS RESET
LANC TO CAM
CAM TO LANC
W702
DIGITAL TITLER (CT-21P)
CN704
CN703
S RAM CS
CG STB
V MUTE
(See page 125, 127.)
VA-46P BOARD
CN508
K OUT 3
K OUT 4
K IN 6
VIDEO(1)
AUDIO
WAKE UP
CAM DD ON
IC001 LANC I/O
DATA OUT
DATA IN
LANC OUT
LANC DC
WAKE UP
P CONT
EVER 5V
UNREG
(CN508 (13))
(CN506 (5))
Q247
Q246
Q245
(See page 126.)
SW-124P BOARD
J901 REMOTE
W900
CN901
CN652
CN601
LANC
LANC DC
Q900
S901 START/STOP
S900 STANDBY
OFF
ON
S651 START/STOP
(See page 125.)
MC-44P BOARD
POWER CAMERA DC-DC CONVERTER
CAM DD ON
(See page 145.)
FU-72P BOARD


SS-100P BOARD
(See page 132.)
IC501 MODE CONTROL
COM 0
COM 3
S6
S19
BIAS
VCC 0
VCC 1
VCC 2
K OUT 0
K OUT 1
K OUT 2
K OUT 3
K OUT 4/DATA TO EE
K OUT 5/SCK EE P
D503
S502 EJECT
S501 REMOTE CONTROL
OFF
ON
E²ROM CS
DATA TO MODE
MECHA CS
K IN 0
K IN 1
K IN 2
K IN 3
K IN 4
K IN 5
K IN 6
IC501 (58)(59) REC/PB
(58) 3.6Vp-p
(59) 5.1Vp-p(4.19MHz)
DATA TO SLVE
DATA TO MSTR
SCK
SYS RESET
SYSTEM SYNC
PB TITLE ON
(MK CS)
TALLY
LED CONT
Q503
L502
Q502
VDD
X501
X2
X1
X502
XT2
XT1
CT501
Q505,506 INITIAL RESET
RESET
LITHIUM BATTERY PRE-END DETECT
Q507,Q508
LI(+)
LI PREEND
BATT IN
REMO CS
Q509
VTR DD ON
CAM DD ON
LANC PWR ON
VIDEO CS
CG STB
TITLE CS
S RAM CS
CAM CS
Q579
SP CS
A MUTE
V MUTE
CAM/LINE
IC501 (56) REC/PB 4.8Vp-p(32.8kHz)
DATA TO SLVE
DATA TO MSTER
SCK
SYSTEM RESET
TALLY
CN502
W501
CN509
W501
VTR DD ON
POWER (SS-100)
IC508 NON-VOLATILE MEMORY
SS 4.9V (Q903)
V CC
EE CS
CS
EE SCK
SK
DATA TO EE
DI
DATA TO MODE
DO
MECHA CS
DATA TO SLAVE
DATA TO MASTER
SCK
IC501 (1/2) MECHANISM CONTROL
SS4.9V (Q903)
SS5V
DD UNREG (CN509 (5)(6))
BATT SENS
X501 16MHz
16M OUT
16M IN
COSMO CS
DATA TO SLYE
DATA TO MSTR
SCK
SYSTEM RESET
SYSTEM SYNC
LOAD
UNLOAD
DEW SENS
THERMISTOR
SS4.9V
TH501
IC501 (34) REC/PB
REC 3Vp-p
PB 2.4Vp-p(16MHz)
MODE SW 0
MODE SW 1
MODE SW 2
S REEL FG
Q514 TAPE END DETECT
END SENS
CC DOWN
Q512 LED DRIVE
T/E LED
Q513 TAPE TOP DETECT
TOP SENS
T REEL FG
REEL LED
REC PROOF
MP HG
ME/MP
H18 DET
H CHG
NOR/H18
SP/LP
FE ON
E/L
D501(1/2)
Q515
CLOG
Q510 CLOG DETECT
INTEGRATOR
Q511 SP/LP DETECT
INTEGRATOR
SP/LP DET
Q508,509 RF DETECT
ATT
LPF
Q507 RF AMP
Q503 BUFFER
PB RF (SERVO)
PB RF
IC507 COMPARATOR
JOG
VA PB MODE
EDIT
SYNC DET
COMP SYNC
VI SWP
RP PB MODE
D501(1/2) SYSTEM RESET
Q516
IC501 (58) REC/PB
2Vp-p(H)
IC501 (4)(80) REC/PB 4.8Vp-p(2V)
HIFI/WIND
MIC JACK MONO/ST
MONO/ST DET
JOG VD
DS ON
MECHANISM CONTROL
SERVO
RF SWP
MONO ST/DET
LM +5V (Q904)
CN502
LM+5V
LOAD
UNLOAD
DEW(+)
MODE 0
MODE 1
MODE 2
S REEL FG
END SENS
CC DOWN
TAPE LED
TOP SENS
T REEL FG
REEL LED
REC PROOF
MP HG
ME/MP
CN501
H CHG
D SWP
E/L
SP/LP
ME/MP
FE ON
VA PB MODE
PB RF OUT
VIDEO(2) (RP-77)
CN508
PB RF
D SWP
CHECK
CN507
CN506
CN503
TALLY
VIEW FINDER (SW-124P)
MECHA CHASSIS
LOADING MOTOR DRIVE
M
LOADING MOTOR
DEW SENSOR
(See page 130.)
CC-31P BOARD
MODE SWITCH
5V
S REEL FG SENSOR
FP-89 BOARD
(See page 130.)
Q301 TAPE END SENSOR
CN512
S903 CASSETTE DOWN
D302 TAPE LED
Q302 TAPE TOP SENSOR
T REEL FG SENSOR
REC PROOF
MP HG
ME/MP
FP-90 BOARD
(See page 130.)
CN511
CN513
CN501 (16) PB V 0.2V/div H 0.1μsec/div
VA-46P BOARD
(See page 125, 127.)
CN507
Y RF OUT
JOG
HCHG
SP/LP
VA PB MODE
EDIT
DOP
VIDEO(1)
SYNC DET
COMP SYNC
VI SWP
RP PB MODE
DS ON
CN506
VA PB MODE
RF SWP
SP/LP
HIFI/WIND
MIC JACK MONO/ST
AUDIO
CN703
JOG
JOG VD
SYNC DET
DS ON
RF SWP
VA PB MODE
DIGITAL TITLER (CT-21P)
Q244
VIDEO(1)
CN704
VA PB MODE

3-11. SERVO, SYSTEM CONTROL SYSTEM TERMINAL FUNCTION SS-100P BOARD IC501 (CXP-80116)

PIN No.	Signal Name	I/O	Function	Connection
1	SEL2	O	ATF REF PILOT signal frequency control ATF REF PILOT f_1 f_2 f_3 f_4 SEL 1 H L H L SEL 2 H H L L	ATF IC
2	SEL1	O		CXA1204Q
3	DS ON	O	Data Screen ON/OFF control. Data Screen ON and Data Screen key are selected with "H"	VIDEO block
4	VI SWP	O	RF SWP using for Vidoe system Normally, same as RF SWP. When using 'CH only "H" 3Head is used.	VIDEO block
5	DRM ACC	O	DRUM motor acceleration signal Acceleration is selected with "H"	To Drum motor driver CXA8006M
6	DRM BLK	O	DRUM motor brake signal Brake is selected with "H"	To Drum motor driver CXA8006M
7	JOG	O	Normal/JOG mode recognition signal JOG is selected with "H"	R/P Amp VIDEO block
8	FE RA	—	Not used	——
9	FE RS	—		
10	H CHG	O	2CH or 'CH select signal 'CH is selected with "H" Only 3Head is used	VIDEO system R/P Amp
11	SYSTEM SYNC	O	Internal bus communication synchronizing signal (V synchronization)	Mode controller
12	SP/$\overline{\text{LP}}$	O	SP/LP mode recognition signal SP mode is selected with "H"	R/P Amp VIDEO/AUDIO block
13	$\overline{\text{NOR}}$/Hi8	O	Not used. Normally, "L"	——
14	VA PB MODE	O	VIDEO/AUDIO system REC/PB mode select PB mode is selected with "H"	VIDEO/AUDIO block
15	UNLOAD	O	Loading motor control signal OFF LOADING UNLOADING BRAKE LOAD L H L H UNLOAD L L H H	TO loading motor
16	LOAD	O		
17	CAP ON2	—	Not used	——
18	AF REC	—	Not used	——
19	ME/$\overline{\text{MP}}$	I	ME/MP tape recognition input ME tape is selected with "H"	To CC board
20	MP HG	I	MP HG tape recognition input MPHG is selected with "L"	To CC board
21	REC PROOF	I	REC PROOF recognition input REC PROOF is selected with "L"	To CC board
22	MODE SW2	I	Mechanical position input	To CC board
23	MODE SW1	I		
24	MODE SW0	I		
25	$\overline{\text{CC DOWN}}$	I	Cassette IN switch input Cassette IN is selected with "L"	To CC board
26	DRM ON	O	Drum motor drive control Motor Drive is selected with "H"	To Drum motor driver CXA8006M
27	T/E LED	O	LED for tape top end sensor drive control LED Flashing is selected with "H"	To CC board
28	$\overline{\text{REEL LED}}$	O	LED for reel sensor drive control LED Flashing is selected with "L"	To CC board

PIN No.	Signal Name	I/O	Function	Connection
29		—	Not used	——
30	$\overline{\mathrm{EDIT}}$	O	EDIT ON/OFF control EDIT is selected with "L"and interlocked with EDIT key.	To VIDEO block
31	SS GND	—	—	——
32	$\overline{\mathrm{SYSTEM}}$ $\overline{\mathrm{RESET}}$	I	Control by mode controller with RESET terminal of this microcomputer RESET is selected "L"	Mode controller and others
33	SS GND	—	—	——
34	16M OUT	O	Crystal connecting terminal for system clock oscillation (16 MHz)	X'tal (X501)
35	16M IN	I		
36	$\overline{\mathrm{COSMO\ CS}}$	I	Select signal of this microcomputer from internal bus communication mode controller Selected with "L"	Mode controller
37	DATA TO SLVE	I	Serial data input terminal	Mode controller
38	DATA TO MSTR	O	Serial data output terminal	Mode controller
39	$\overline{\mathrm{SCK}}$	I	Serial clock input terminal	Mode controller
40	PCM ACT	—	Not used	——
41	Hi8 DET	—	Not used Normally, "L"	——
42	S IN	—	Not used Normally, "H"	——
43	$\overline{\mathrm{MONO}}$/ST DET	I	AFM monaural/stereo recognition input Stereo is selected "H" (Only stereo correspondence model)	To AUDIO block
44	TOP SENS	I	Tape top end sensor input TOP is selected with "H"	To CC board
45	END SENS	I	END is selected with "H"	
46	T REEL FG	I	Reel sensor input Take up side	To CC board
47	S REEL FG	I	Reel sensor input Supply side	
48	BATT SENS	I	Battery input voltage sense	——
49	DEW SENS	I	DEW SENSOR input	DEW SENSOR
50	THERMISTOR	I	THERMISTOR input (This model : fixed value)	
51	ATF ERROR	I	ATF error (ATF LOCK error) input, A/D input terminal	IC506⑫
52	SS GND	—	—	——
53 54	SS 4.9V		Power source supply terminal	
55	DRM PG	I	DRUM PG input, FRC (high precision timer) capture input terminal	IC502 ⑨
56	$\overline{\mathrm{HiFi}}$/WIND	I	MIC HiFi/WIND input. HiFi is selected with "L", WIND is selected with "H"	To AUDIO block
57	CLOG	I	Clog detection signal input. CLOG is selected with "H"	Q510 ©
58	COMP SYNC	I	Composite trunk (composite synchronizing signal) input. (built-in V SYNC separator)	To V IDEO block
59	SP/$\overline{\mathrm{LP}}$ DET	I	SP/LP recognition signal input	Q511 ©

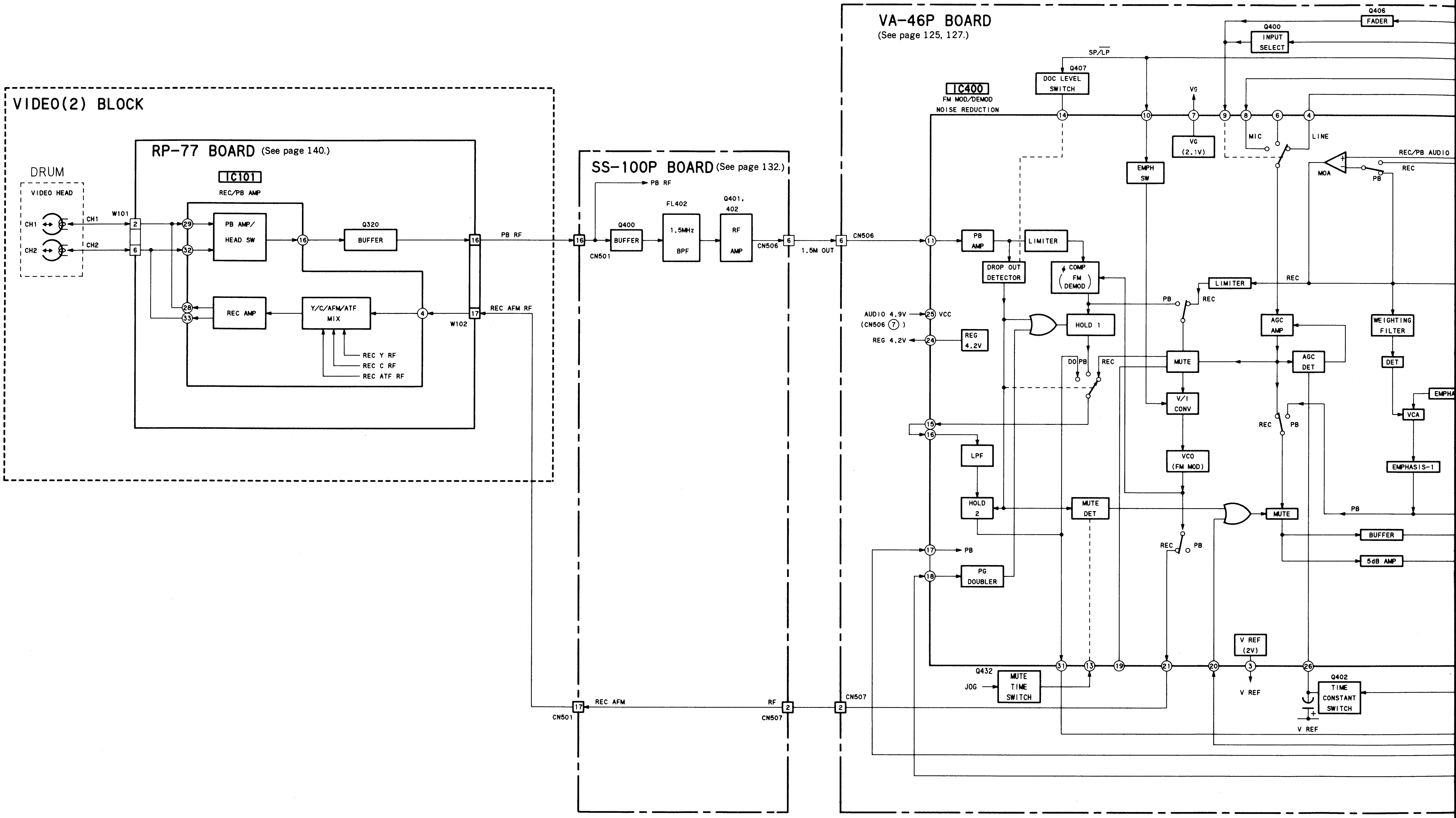
PIN No.	Signal Name	I/O	Function	Connection
60	DRM PG	—	—	——
61	DRM FG	I	DRUM FG input terminal, FRC capture input terminal	IC502 ⑩ Sense Amplifier
62	CAP FG	I	CAPSTAN FG input terminal, FRC capture input terminal	IC502⑫ Sense amplifier
63	MONO/$\overline{\text{ST}}$	—	Not used	——
64	SYNC DET	I	With/Without VIDEO signal recognition signal input	To VIDEO block
65	CAP D/A	O	DA gate pulse output terminal for CAP ERROR output, Servo exclusive output terminal (DA mode)	To capstan lowpass filter
66	DRM D/A	O	DA gate pulse output terminal for DRUM ERROR output, Servo exclusive output terminal (DA mode)	To drum lowpass filter
67	CAP PWM	O	PWM output terminal for CAP ERROR output, Servo excluseive output terminal (PWM mode)	Capstan driver IC503
68	DRM RVS	O	DRUM rotating direction control signal RVS is selected with "H" FWD is selected with "L"	IC503 ③
69	CAP FG	I	External event input terminal to CAP FG input terminal exclusive counter for TAPE COUNTER drive	IC502⑫ sense amplifier
70	MIC JACK MONO/$\overline{\text{ST}}$	I	External MIC Monaural/stereo recognition signal. Monaural is selected with "H"	To AUDIO block
71 72	SS 4.9V			
73	SS GND	—	—	——
74	—	—	Not used	——
75	CAP ON	O	Capstan driver ON control signal	IC504⑬ Capstan driver
76	CAP FWD/$\overline{\text{REV}}$	O	Capstan rotaing direction control signal, FWD is selected with "H", RVS is selected with "L"	IC504⑳ Capstan driver
77	$\overline{\text{RP PB MODE}}$	O	REC/PB mode select signal of RP amplifier and ATF IC	Q516 Ⓑ
78	FE ON	O	Flying erase oscillation ON/OFF signal. Oscillation is selected with "H"	To RP AMP.
79	JOG VD	O	Artificial VD output terminal input to VIDEO signal in varying speed playback	To VIDEO block
80	RF SWP	O	RF SWP output temrinal	RP block VIDEO/AUDIO block

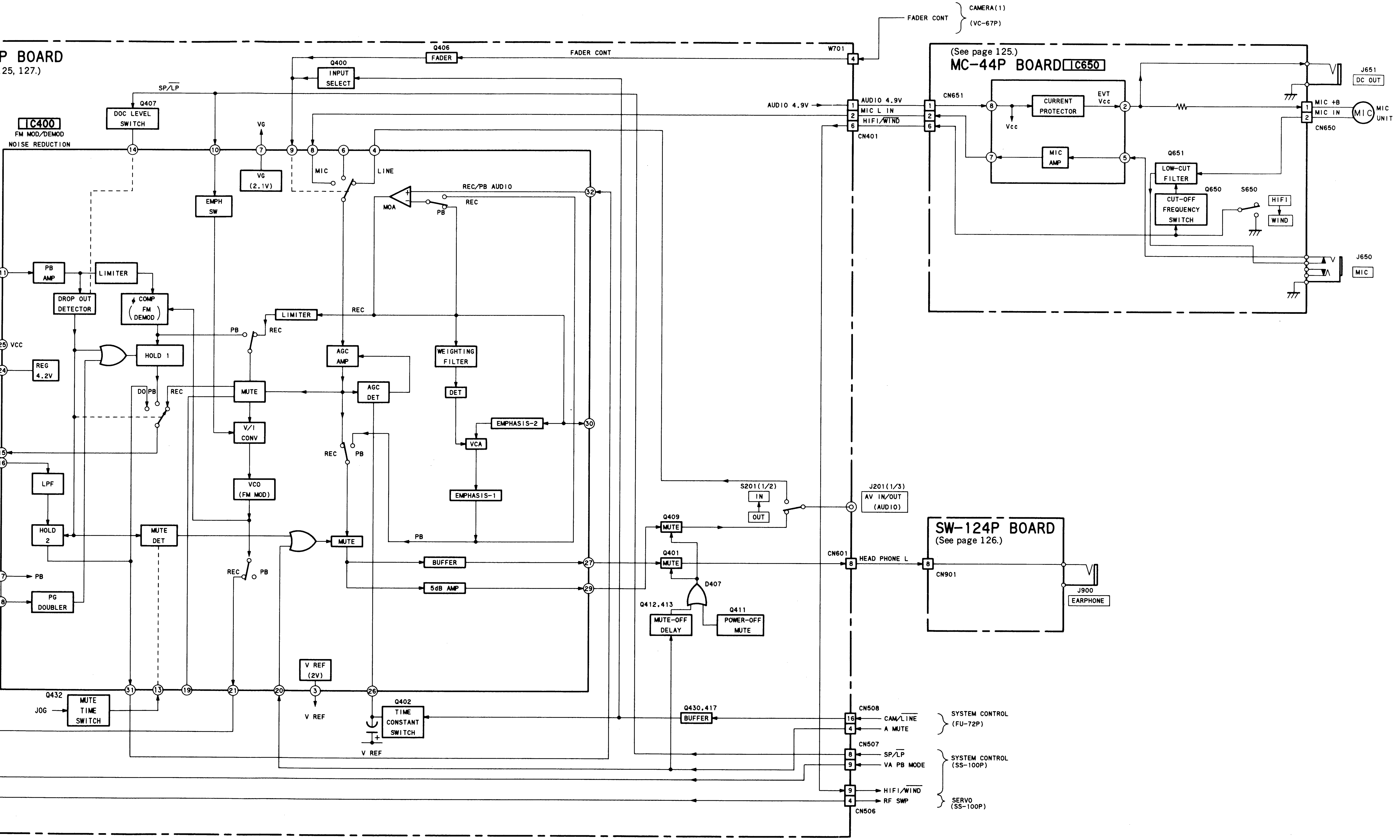
3-12. MODE CONTROL SYSTEM IC TERMINAL FUNCTION DESCRIPTION FU-72P BOARD IC501 (μPD75312)

PIN No.	Port Name	Function	I/O	Connection	Signal Name
1	S12	Segment signal output	O	LCD	S12
2	S13	LCD segment terminal drive	O	LCD	S13
3	S14	Output (Four value output of 0, 1.7, 3.3, 5V)	O	LCD	S14
4	S15	Output (Four value output of 0, 1.7, 3.3, 5V)	O	LCD	S15
5	S16	Output (Four value output of 0, 1.7, 3.3, 5V)	O	LCD	S16
6	S17	Output (Four value output of 0, 1.7, 3.3, 5V)	O	LCD	S17
7	S18	Output (Four value output of 0, 1.7, 3.3, 5V)	O	LCD	S18
8	S19	Output (Four value output of 0, 1.7, 3.3, 5V)	O	LCD	S19
9	S20	Not used	O	LCD	
10	S21	Not used	O	LCD	
11	S22	Not used	O	LCD	
12	S23	Not used	O	LCD	
13	S24/BP0	Chip select signal to video IC (CXA1207) ⊔ 1V period "L" pulse	O	VA	$\overline{\text{VIDEO CS}}$
14	S25/BP1	Chip select signal to SS-100 BOARD IC501 (CXP80116) ⊔ 1V period "L" pulse	O	SS IC501	$\overline{\text{MECHA CS}}$
15	S26/BP2	Timing pulse of power source ON/OFF to photosensor ⊓ 1V period "H" pulse	O	CK-40,Q672	LED CONT
16	S27/BP3	Strobe signal for character generator (μPD6451) ⊓ 1V "H" pulse train.	O	VA	CG STB
17	S28/BP4	Chip select to titler (CF79028) ⊔ 1V "L" pulse	O		$\overline{\text{TITEL CS}}$
18	S29/BP5	Chip select to sercs remote control (μPD7564) ⊔ 1V "L" pulse	O	DK-6	$\overline{\text{REMO CS}}$ REMOTE CONTROL
19	S30/BP6	Chip select to S RAM. "H" when using title, Normally, "L"	O		S RAM CS
20	S31/BP7	Chip select to camera μCON ⊓ 1V period "H" pulse	O	CAMERA	CAM CS
21	COM0	LCD to common signal output Common terminal drive output	O	LCD	COM0
22	COM1		O	LCD	COM1
23	COM2		O	LCD	COM2
24	COM3		O	LCD	COM3
25	BIAS	Output terminal for outside dividing resistance cut, Power input	O	LCD	BIAS
26	VLC0	Power source for LCD drive, 3V in backup Power source 0 input terminal	I	FU	VLC0
27	VLC1	Power source 1 input terminal	I	FU	VLC1
28	VLC2	Power source 2 input terminal	I	FU	VLC2
29	P40	SS 5V,VTR 5V power source detection, "H" when VTR power source is turned on.	O	VA	VTR DD ON
30	P41	CAM 5V power source detection	O	CAMERA	$\overline{\text{CAM DD ON}}$
31	P42	Output port to reset each IC when power is turned on.	O	all	$\overline{\text{SYS RESET}}$
32	P43	External tally and internal tally drive port	O	VA and DK	$\overline{\text{TALLY}}$
33	V_{ss}	GND			V_{ss}
34	P50	L active KEY matrix output port	O	all	K OUT_0
35	P51		O	all	K OUT_1
36	P52		O	all	K OUT_2
37	P53		O	all	K OUT_3
38	P00/INT4	Clock select to 32K with "L" and to 4.19M with "H" when Battery is turned on, "L" is select.	I	FU	$\overline{\text{BATT IN}}$

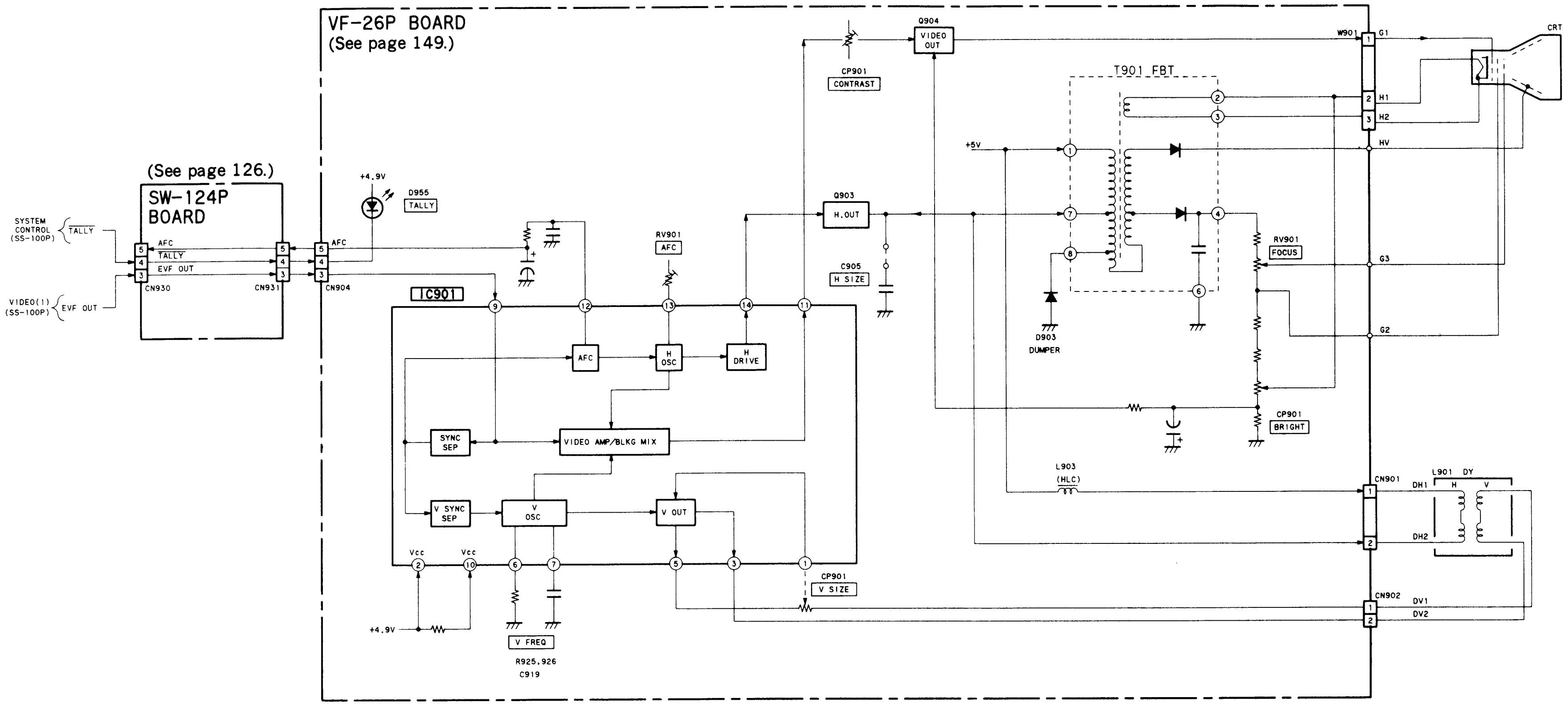
PIN No.	Port Name	Function	I/O	Connection	Signal name
39	P01/$\overline{\text{SCK}}$	Serial clock input-output terminal, Serial clock (2μS) communication	O	all	$\overline{\text{SCK}}$
40	P02/SO/SB0	Serial clock input-output terminal, Serial clock (2μS) communication	O	all	DATA TO SLV
41	P03/SI/SB1	Serial bus input-output terminal, Serial clock (2μS) communication	I	all	DATA TO MASTR
42	P10/INT0	(Edge detection vector interruption), System synchronization input port from CXD80116	I	SS IC501	SYSTEM SYNC
43	P11/INT1	(Edge detection vector interruption), Lithium PRE END is selected with "L"	I	FU	$\overline{\text{LI PRE END}}$
44	P12/INT2	STABY release input, Release wiht "L" , STA	I	VA	$\overline{\text{LINCS PWR ON}}$
45	P13/TIO	EE PROM serial communication data input, EE PROM communiaction KEY matrix OUT is combined.	I	SS IC508	DATA TO MODE
46	P20/PT00	EE PROM serial communication date output, EE PROM communication KEY matrix OUT is combined.	O	SS IC508	KOUT4/DATA TO EE
47	P21	EE PROM serial communication clock output key matrix output, EE PROM communication KEY matrix OUT is combined.	O	SS VK IC508	KOUT5/SCK EE
48	P22/PCL	Not used	O		PB TITLE ON
49	P23/BUZ	Chip select to EEP ROM	O	SS IC508	$\overline{\text{EE PROM CS}}$
50	P30/LCDCL	CAMERA/LINE select output, Camera mode is selected wiht "H", VTR is selected with "L"	O	VA	CAM/$\overline{\text{LINE}}$
51	P31/SYNC	Video mute output	O	VA	V MUTE
52	P32	Audio mute output	O	VA	A MUTE
53	P33	Chip select to serial/parallel IC	O	VA	SP CS
54	V$_{DD}$	V$_K$ 3V/5V power source terminal		FU	V$_{DD}$
55	XT1	Sub system clock 32K oscillation terminal	I	FU	XT1
56	XT2			FU	XT2
57	NC			—	NC
58	X1	Main system clock 4.19M oscillation terminal	I	FU	X1
59	X2		I	FU	X2
60	P60/KK0	KEY matrix input terminal 18msec period normally "H" Input-Output is possible by bit. Pull-up from software is possible by 4-bit.	I	all	K IN 0
61	P61/KR1		I	all	K IN 1
62	P62/KR2		I	all	K IN 2
63	P63/KR3		I	all	K IN 3
64	P70/KR4	KEY matrix input terminal. 18msec period normally "H" 4-bit input-Output port. Pull-up from software is possible by 4-bit.	I	all	K IN 4
65	P71/KR5		I	all	K IN 5
66	P72/KR6		I	all	K IN 6
67	P73/KR7		I	all	K IN 7
68	$\overline{\text{RESET}}$	System reset input, Reset input terminal of microcomputer	I		$\overline{\text{RESET}}$
69	S0	Segment signal output terminal not used.	O	LCD	
70	S1		O	LCD	
71	S2		O	LCD	
72	S3		O	LCD	
73	S4		O	LCD	
74	S5		O	LCD	
75	S6	LCD segment signal output terminal. (This set not used).	O	LCD	
76	S7		O	LCD	
77	S8		O	LCD	
78	S9		O	LCD	
79	S10		O	LCD	
80	S11		O	LCD	

3-13. AUDIO BLOCK DIAGRAM

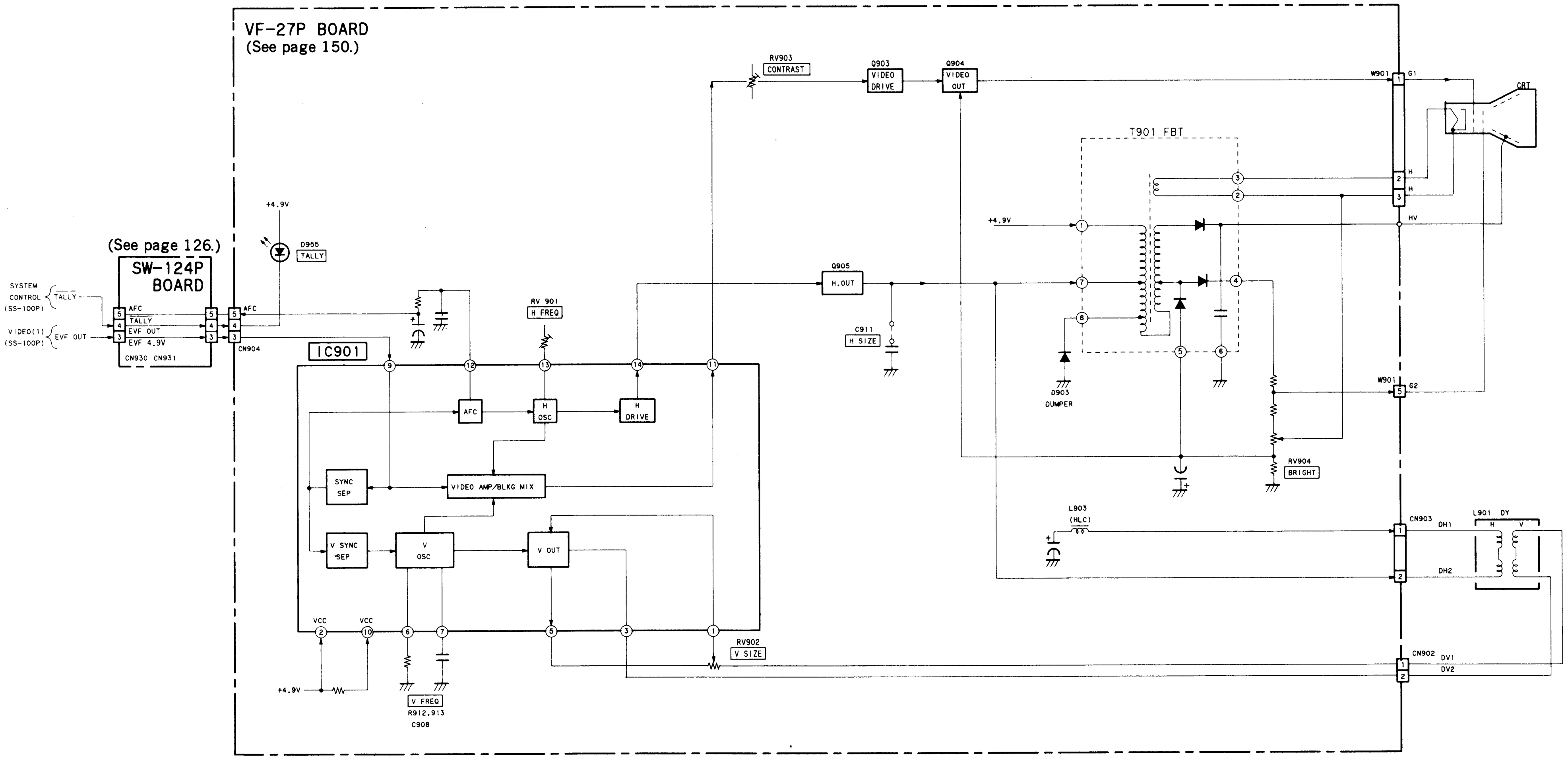

VIDEO(2) BLOCK
DRUM
VIDEO HEAD
CH1
CH2
W101
RP-77 BOARD (See page 140.)
IC101
REC/PB AMP
PB AMP/
HEAD SW
Q320
BUFFER
REC AMP
Y/C/AFM/ATF
MIX
REC Y RF
REC C RF
REC ATF RF
W102
PB RF
REC AFM RF
SS-100P BOARD (See page 132.)
PB RF
Q400
BUFFER
FL402
1.5MHz
BPF
Q401,
402
RF
AMP
CN501
CN506
1.5M OUT
REC AFM
RF
CN507
VA-46P BOARD
(See page 125, 127.)
IC400
FM MOD/DEMOD
NOISE REDUCTION
Q407
DOC LEVEL
SWITCH
SP/LP
Q406
FADER
Q400
INPUT
SELECT
VG
VG
(2.1V)
EMPH
SW
MIC
LINE
REC/PB AUDIO
MOA
REC
PB
PB
AMP
LIMITER
DROP OUT
DETECTOR
COMP
FM
DEMOD
LIMITER
REC
PB
REC
AUDIO 4.9V
(CN506 ⑦)
VCC
REG 4.2V
REG
4.2V
HOLD 1
AGC
AMP
WEIGHTING
FILTER
DO
PB
REC
MUTE
AGC
DET
DET
V/I
CONV
EMPHA
VCA
REC
PB
LPF
VCO
(FM MOD)
EMPHASIS-1
HOLD
2
MUTE
DET
MUTE
PB
BUFFER
REC
PB
5dB AMP
PB
PG
DOUBLER
Q432
JOG
MUTE
TIME
SWITCH
V REF
(2V)
V REF
Q402
TIME
CONSTANT
SWITCH
V REF


P BOARD
25, 127.)
IC400
FM MOD/DEMOD
NOISE REDUCTION
FADER CONT
CAMERA(1)
(VC-67P)
Q406
FADER
FADER CONT
W701
Q400
INPUT
SELECT
SP/LP
Q407
DOC LEVEL
SWITCH
VG
VG
(2.1V)
MIC
LINE
EMPH
SW
REC/PB AUDIO
MOA
REC
PB
PB
AMP
LIMITER
DROP OUT
DETECTOR
COMP
FM
DEMOD
LIMITER
REC
PB
REC
VCC
REG
4.2V
HOLD 1
AGC
AMP
WEIGHTING
FILTER
DO
PB
REC
MUTE
AGC
DET
DET
V/I
CONV
EMPHASIS-2
VCA
REC
PB
LPF
VCO
(FM MOD)
EMPHASIS-1
HOLD
2
MUTE
DET
MUTE
PB
BUFFER
5dB AMP
REC
PB
PB
PG
DOUBLER
V REF
(2V)
Q432
JOG
MUTE
TIME
SWITCH
V REF
Q402
TIME
CONSTANT
SWITCH
V REF
AUDIO 4.9V
AUDIO 4.9V
MIC L IN
HIFI/WIND
CN401
S201(1/2)
IN
OUT
J201(1/3)
AV IN/OUT
(AUDIO)
Q409
MUTE
Q401
MUTE
D407
Q412,413
MUTE-OFF
DELAY
Q411
POWER-OFF
MUTE
CN601
HEAD PHONE L
Q430,417
BUFFER
CN508
CAM/LINE
A MUTE
SYSTEM CONTROL
(FU-72P)
CN507
SP/LP
VA PB MODE
SYSTEM CONTROL
(SS-100P)
HIFI/WIND
RF SWP
SERVO
(SS-100P)
CN506
(See page 125.)
MC-44P BOARD IC650
CN651
CURRENT
PROTECTOR
EVT
Vcc
Vcc
MIC
AMP
Q651
LOW-CUT
FILTER
Q650
CUT-OFF
FREQUENCY
SWITCH
S650
HIFI
WIND
J651
DC OUT
MIC +B
MIC IN
MIC
MIC
UNIT
CN650
J650
MIC
SW-124P BOARD
(See page 126.)
CN901
J900
EARPHONE

3-14. VIEWFINDER BLOCK DIAGRAM

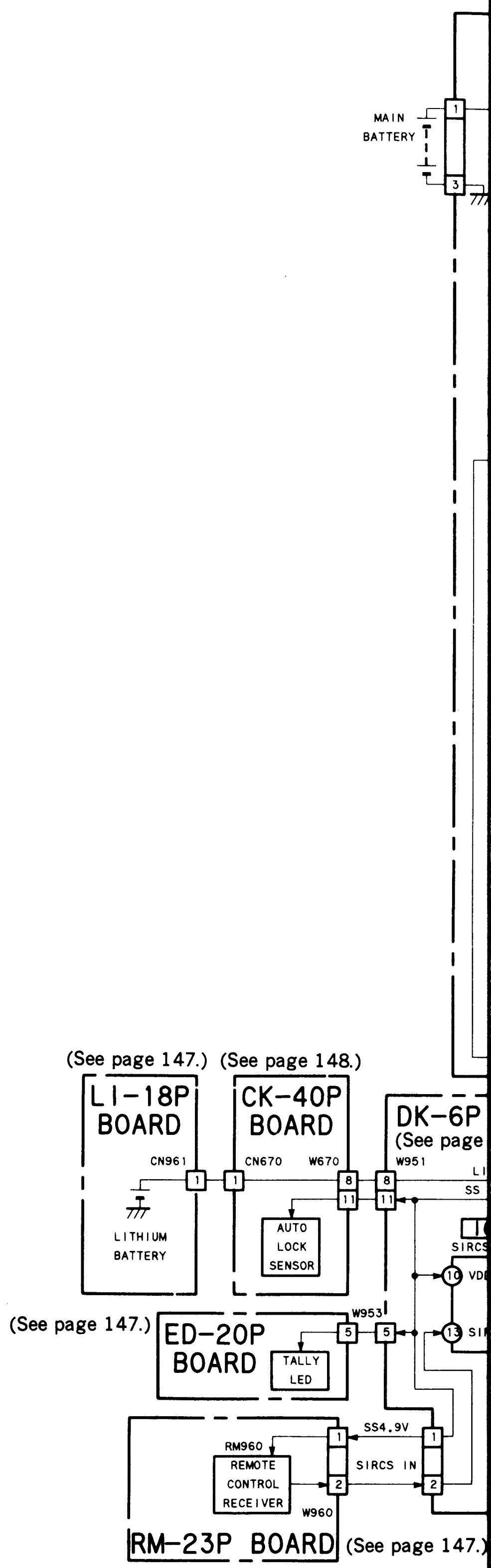


VF-26P BOARD
(See page 149.)
(See page 126.)
SW-124P BOARD
SYSTEM CONTROL (SS-100P)
TALLY
VIDEO(1) (SS-100P)
EVF OUT
AFC
TALLY
EVF OUT
CN930
CN931
CN904
+4.9V
D955
TALLY
IC901
AFC
H OSC
H DRIVE
SYNC SEP
VIDEO AMP/BLKG MIX
V SYNC SEP
V OSC
V OUT
Vcc
RV901
AFC
Q903
H.OUT
C905
H SIZE
Q904
VIDEO OUT
CP901
CONTRAST
T901 FBT
+5V
D903
DUMPER
RV901
FOCUS
CP901
BRIGHT
L903
(HLC)
CP901
V SIZE
V FREQ
R925,926
C919
W901
G1
H1
H2
HV
G3
G2
CRT
CN901
DH1
DH2
L901 DY
H
V
CN902
DV1
DV2



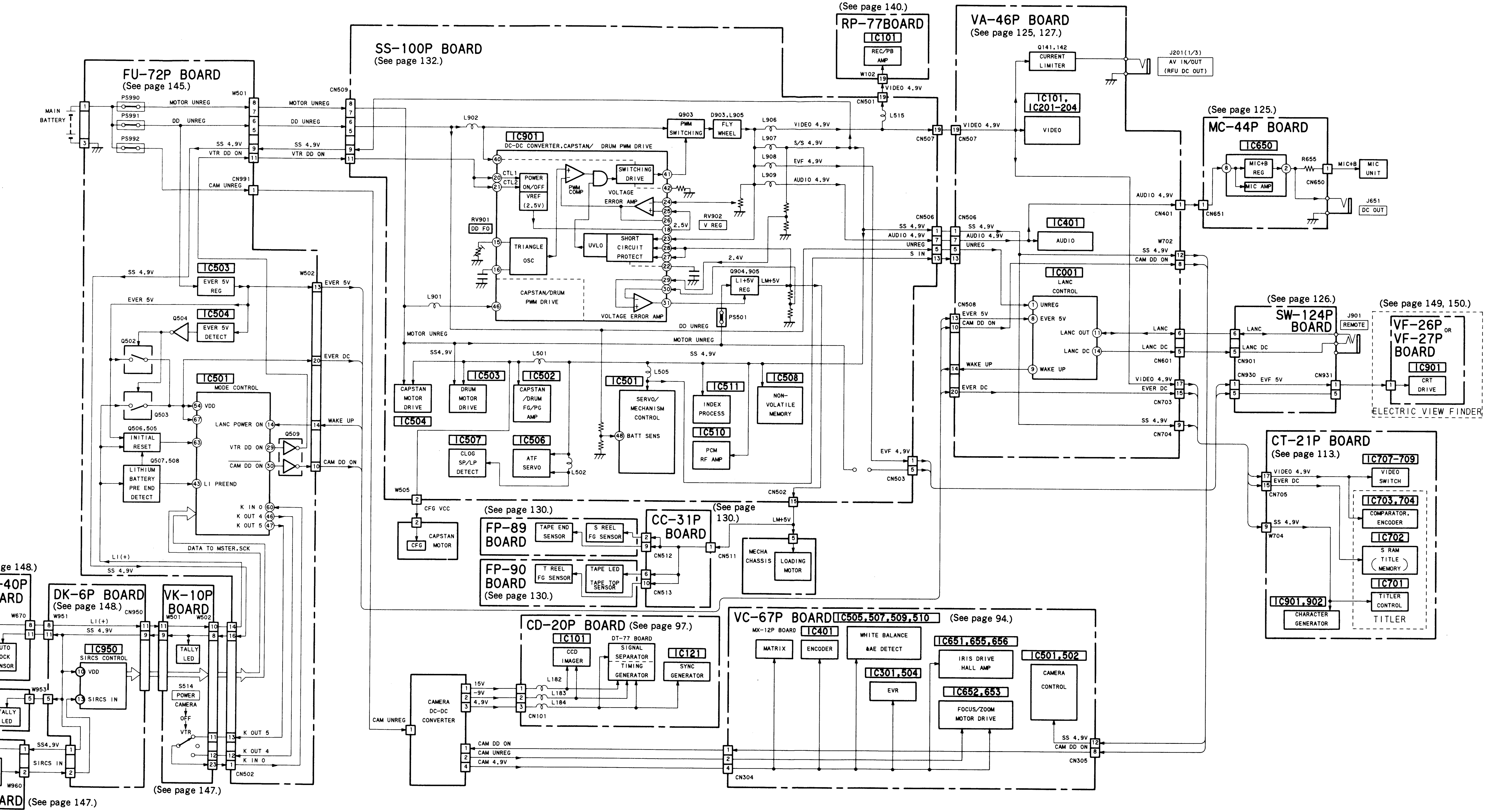
VF-27P BOARD
(See page 150.)
(See page 126.)
SW-124P BOARD
SYSTEM CONTROL (SS-100P)
TALLY
VIDEO(1) (SS-100P)
EVF OUT
AFC
TALLY
EVF OUT
EVF 4.9V
CN930 CN931
CN904
+4.9V
D955
TALLY
IC901
AFC
H OSC
H DRIVE
SYNC SEP
VIDEO AMP/BLKG MIX
V SYNC SEP
V OSC
V OUT
VCC
RV 901
H FREQ
RV903
CONTRAST
Q903
VIDEO DRIVE
Q904
VIDEO OUT
Q905
H.OUT
C911
H SIZE
T901 FBT
D903
DUMPER
RV904
BRIGHT
L903
(HLC)
RV902
V SIZE
V FREQ
R912,913
C908
W901
G1
H
HV
G2
CRT
CN903
DH1
DH2
L901 DY
CN902
DV1
DV2

3-15. POWER BLOCK DIAGRAM



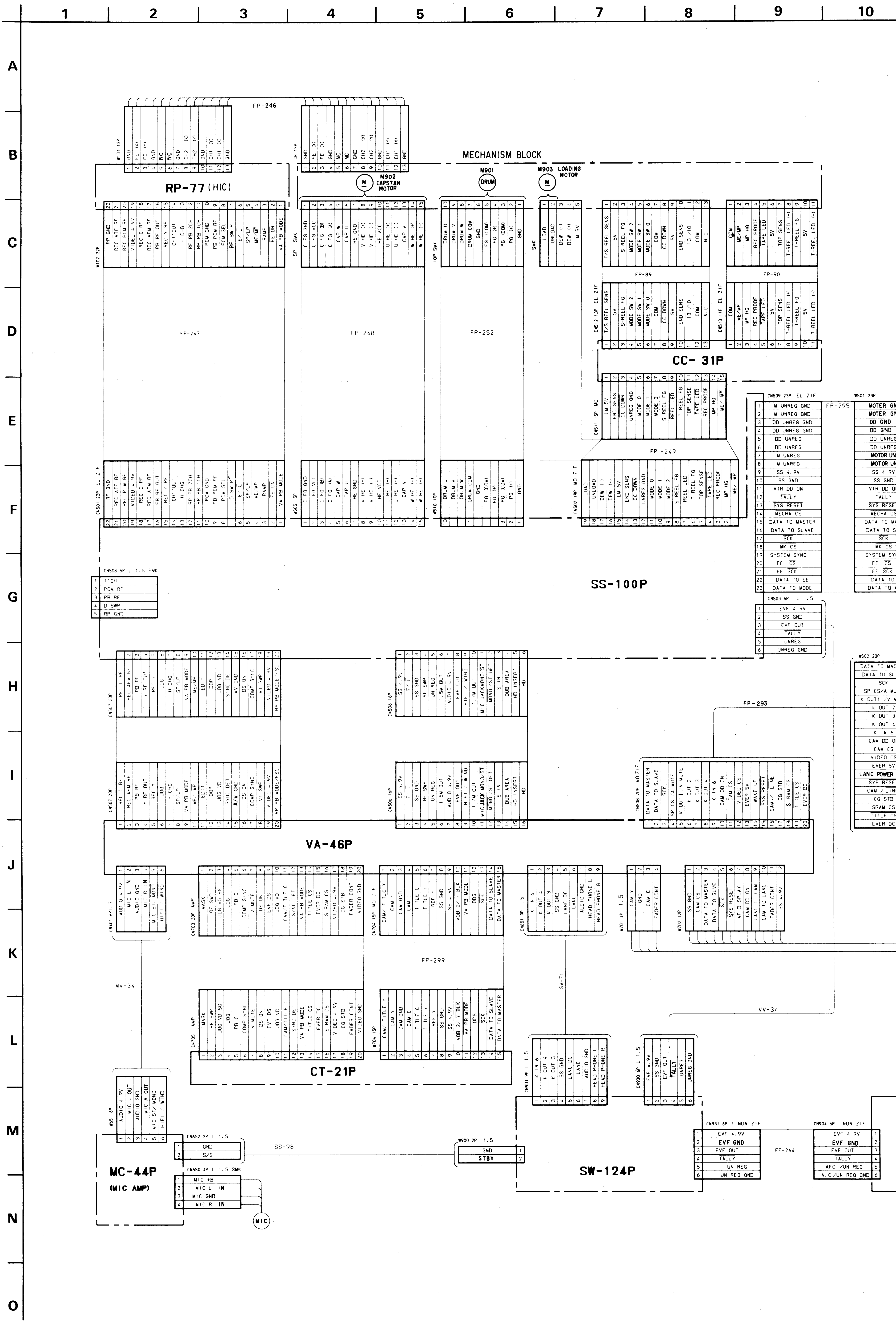
MAIN BATTERY
(See page 147.)
LI-18P BOARD
CN961
LITHIUM BATTERY
(See page 148.)
CK-40P BOARD
CN670
W670
AUTO LOCK SENSOR
DK-6P
(See page
W951
SS
SIRCS
VD
SI
W953
(See page 147.)
ED-20P BOARD
TALLY LED
RM960
REMOTE CONTROL RECEIVER
W960
SS4.9V
SIRCS IN
RM-23P BOARD
(See page 147.)

OCK DIAGRAM

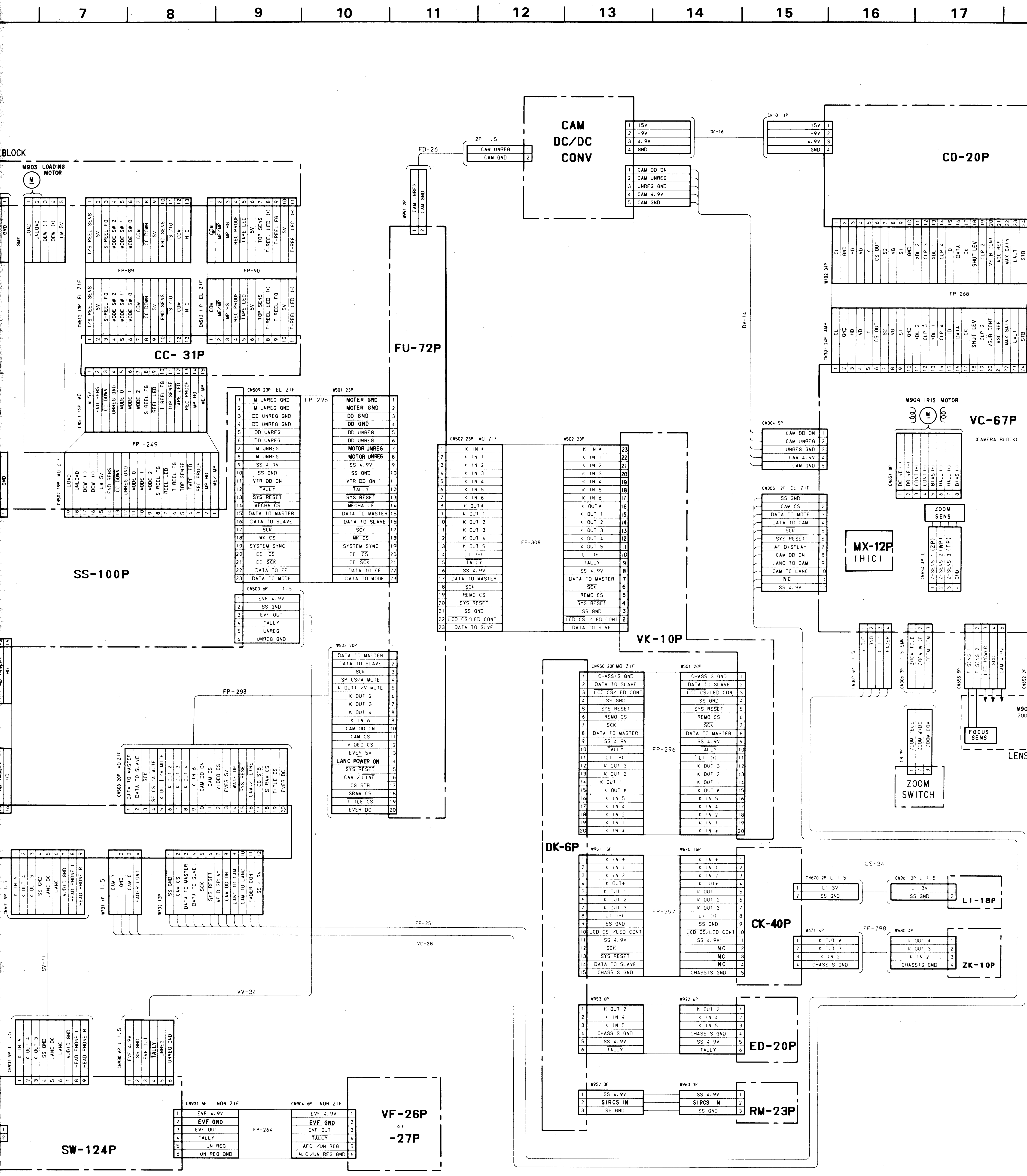

FU-72P BOARD
(See page 145.)
MAIN BATTERY
PS990
PS991
PS992
MOTOR UNREG
DD UNREG
SS 4.9V
VTR DD ON
CAM UNREG
W501
CN991
IC503
EVER 5V REG
IC504
EVER 5V DETECT
Q504
Q502
Q503
IC501
MODE CONTROL
VDD
LANC POWER ON
VTR DD ON
CAM DD ON
Q509
Q506,505
INITIAL RESET
Q507,508
LITHIUM BATTERY PRE END DETECT
LI PREEND
K IN 0
K OUT 4
K OUT 5
DATA TO MSTER.SCK
LI(+)
W502
EVER 5V
EVER DC
WAKE UP
CAM DD ON
SS-100P BOARD
(See page 132.)
CN509
L902
IC901
DC-DC CONVERTER,CAPSTAN/ DRUM PWM DRIVE
CTL1
CTL2
POWER ON/OFF
VREF (2.5V)
PWM COMP
SWITCHING DRIVE
VOLTAGE ERROR AMP
RV901
DD FO
TRIANGLE OSC
UVLO
SHORT CIRCUIT PROTECT
CAPSTAN/DRUM PWM DRIVE
RV902
V REG
2.5V
2.4V
Q904,905
LI+5V REG
LM+5V
PS501
VOLTAGE ERROR AMP
L901
Q903
PWM SWITCHING
D903,L905
FLY WHEEL
L906
L907
L908
L909
VIDEO 4.9V
S/S 4.9V
EVF 4.9V
AUDIO 4.9V
DD UNREG
MOTOR UNREG
SS4.9V
L501
SS 4.9V
L505
CAPSTAN MOTOR DRIVE
IC504
IC503
DRUM MOTOR DRIVE
IC502
CAPSTAN /DRUM FG/PG AMP
IC501
SERVO/ MECHANISM CONTROL
BATT SENS
IC511
INDEX PROCESS
IC510
PCM RF AMP
IC508
NON-VOLATILE MEMORY
IC507
CLOG SP/LP DETECT
IC506
ATF SERVO
L502
W505
CFG VCC
CFG
CAPSTAN MOTOR
CN506
CN507
CN501
CN503
CN502
EVF 4.9V
UNREG
S IN
RP-77BOARD
(See page 140.)
IC101
REC/PB AMP
W102
VIDEO 4.9V
L515
VA-46P BOARD
(See page 125, 127.)
Q141,142
CURRENT LIMITER
J201(1/3)
AV IN/OUT (RFU DC OUT)
IC101, IC201-204
VIDEO
AUDIO 4.9V
CN401
IC401
AUDIO
W702
CAM DD ON
CN508
IC001
LANC CONTROL
UNREG
EVER 5V
LANC OUT
LANC DC
WAKE UP
EVER DC
CN601
CN703
CN704
MC-44P BOARD
(See page 125.)
IC650
MIC+B REG
MIC AMP
R655
MIC+B
MIC UNIT
CN650
CN651
J651
DC OUT
SW-124P BOARD
(See page 126.)
J901
REMOTE
LANC
LANC DC
CN901
CN930
CN931
EVF 5V
VF-26P OR VF-27P BOARD
(See page 149, 150.)
IC901
CRT DRIVE
ELECTRIC VIEW FINDER
CT-21P BOARD
(See page 113.)
IC707-709
VIDEO SWITCH
IC703,704
COMPARATOR, ENCODER
IC702
S RAM (TITLE MEMORY)
IC701
TITLER CONTROL
IC901,902
CHARACTER GENERATOR
TITLER
CN705
W704
FP-89 BOARD
TAPE END SENSOR
S REEL FG SENSOR
CC-31P BOARD
(See page 130.)
CN512
CN513
CN511
FP-90 BOARD
(See page 130.)
T REEL FG SENSOR
TAPE LED
TAPE TOP SENSOR
MECHA CHASSIS
LOADING MOTOR
ge 148.)
-40P
ARD
W670
UTO
OCK
NSOR
ALLY
LED
ARD
(See page 147.)
W960
DK-6P BOARD
(See page 148.)
W951
CN950
IC950
SIRCS CONTROL
VDD
SIRCS IN
W953
SS4.9V
VK-10P BOARD
W501
W502
TALLY LED
S514
POWER
CAMERA
OFF
VTR
K OUT 5
K OUT 4
K IN 0
CN502
(See page 147.)
CAM UNREG
CAMERA DC-DC CONVERTER
15V
-9V
4.9V
CAM DD ON
CAM UNREG
CAM 4.9V
CD-20P BOARD (See page 97.)
IC101
CCD IMAGER
DT-77 BOARD
SIGNAL SEPARATOR
TIMING GENERATOR
IC121
SYNC GENERATOR
L182
L183
L184
CN101
VC-67P BOARD
IC505,507,509,510
(See page 94.)
MX-12P BOARD
IC401
MATRIX
ENCODER
WHITE BALANCE &AE DETECT
IC651,655,656
IRIS DRIVE HALL AMP
IC501,502
CAMERA CONTROL
IC301,504
EVR
IC652,653
FOCUS/ZOOM MOTOR DRIVE
CN304
CN305

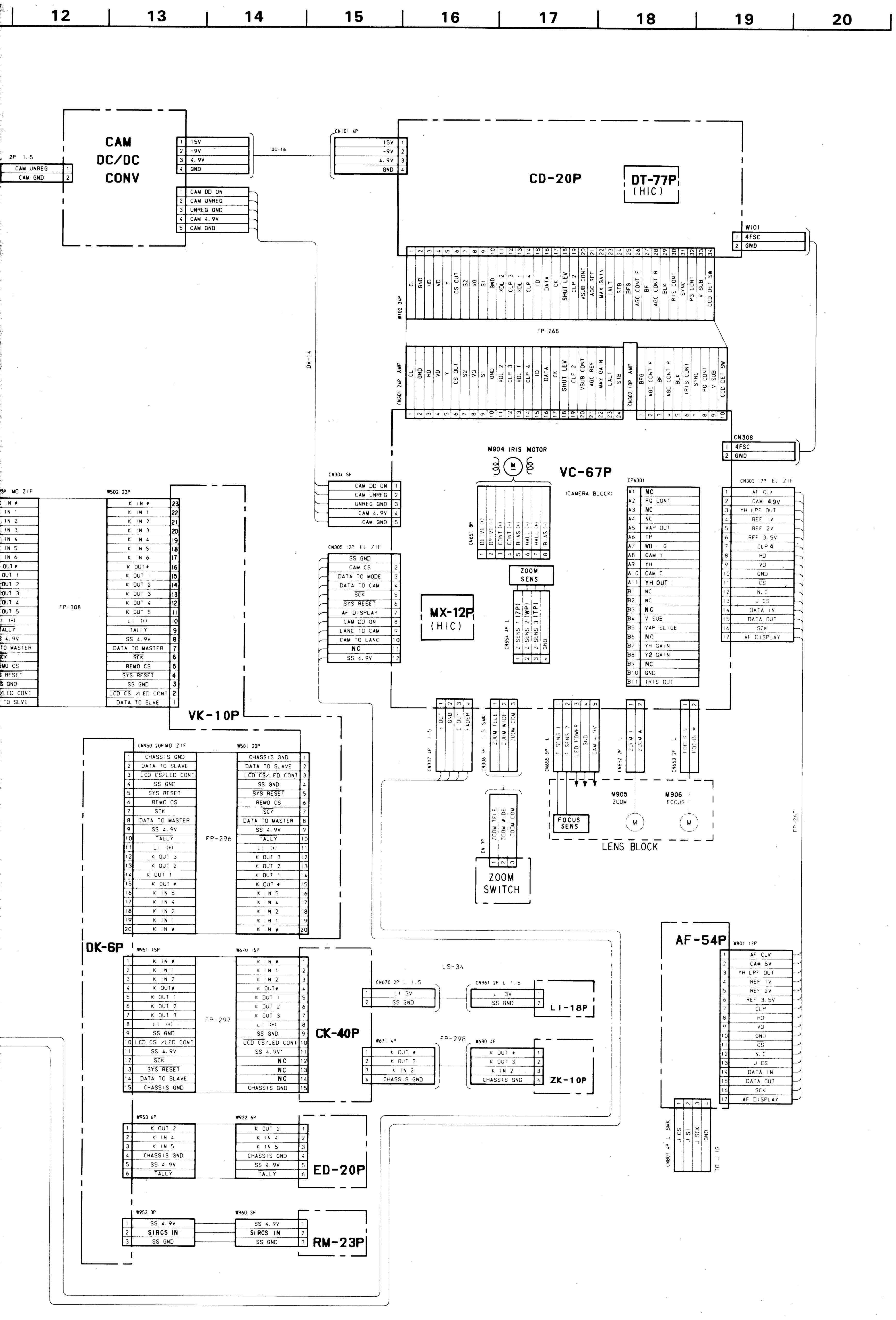
SECTION 4
PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

4-1. FRAME SCHEMATIC DIAGRAM



1
2
3
4
5
6
7
8
9
10
A
B
C
D
E
F
G
H
I
J
K
L
M
N
O
FP-246
MECHANISM BLOCK
M902 CAPSTAN MOTOR
M901 DRUM
M903 LOADING MOTOR
RP-77 (HIC)
FP-247
FP-248
FP-252
FP-89
FP-90
CC- 31P
FP-249
FP-295
SS-100P
CN508 5P L 1.5 SMK
CN509 23P EL ZIF
W501 23P
CN503 6P L 1.5
W502 20P
FP-293
VA-46P
CT-21P
FP-299
MV-34
SV-71
VV-34
SS-98
MC-44P
(MIC AMP)
CN652 2P L 1.5
CN650 4P L 1.5 SMK
MIC
W900 2P 1.5
GND
STBY
SW-124P
CN931 6P 1 NON ZIF
CN904 6P NON ZIF
FP-264


7
8
9
10
11
12
13
14
15
16
17
BLOCK
M903 LOADING MOTOR
CAM DC/DC CONV
DC-16
CD-20P
FD-26
CAM UNREG
CAM GND
15V
-9V
4.9V
GND
CAM DD ON
UNREG GND
CAM 4.9V
FP-89
FP-90
CC- 31P
FU-72P
DV-14
FP-268
FP-249
FP-295
SS-100P
FP-308
VK-10P
M904 IRIS MOTOR
VC-67P
(CAMERA BLOCK)
ZOOM SENS
MX-12P (HIC)
FOCUS SENS
LENS
ZOOM SWITCH
FP-293
DK-6P
FP-296
FP-297
CK-40P
LS-34
LI-18P
FP-298
ZK-10P
ED-20P
RM-23P
FP-251
VC-28
SV-71
VV-34
FP-264
SW-124P
VF-26P or -27P


12
13
14
15
16
17
18
19
20
CAM DC/DC CONV
15V
-9V
4.9V
GND
CAM DD ON
CAM UNREG
UNREG GND
CAM 4.9V
CAM GND
CAM UNREG
CAM GND
DC-16
CN101 4P
CD-20P
DT-77P (HIC)
W101
4FSC
GND
W102 34P
FP-268
CN301 24P AMP
CN302 10P AMP
CL
GND
HD
VD
Y
CS OUT
S2
VB
S1
GND
XDL 2
CLP 3
XDL 1
CLP 4
ID
DATA
CK
SHUT LEV
CLP 2
VSUB CONT
AGC REF
MAX GAIN
LALT
STB
BFG
AGC CONT F
BF
AGC CONT R
BLK
IRIS CONT
SYNC
PG CONT
V SUB
CCD DET SW
CN308
DV-14
M904 IRIS MOTOR
VC-67P
(CAMERA BLOCK)
CN304 5P
CN305 12P EL ZIF
SS GND
CAM CS
DATA TO MODE
DATA TO CAM
SCK
SYS RESET
AF DISPLAY
CAM DD ON
LANC TO CAM
CAM TO LANC
NC
SS 4.9V
CN651 8P
DRIVE (+)
DRIVE (-)
CONT (+)
CONT (-)
BIAS (+)
HALL (+)
HALL (-)
BIAS (-)
ZOOM SENS
CN654 4P
MX-12P (HIC)
CPA301
NC
PG CONT
VAP OUT
TP
WB - G
CAM Y
YH
CAM C
YH OUT I
V SUB
VAP SLICE
YH GAIN
Y2 GAIN
GND
IRIS OUT
CN303 17P EL ZIF
AF CLK
CAM 4.9V
YH LPF OUT
REF 1V
REF 2V
REF 3.5V
CLP 4
HD
VD
GND
CS
N.C
J CS
DATA IN
DATA OUT
SCK
AF DISPLAY
CN307 4P
CN306 3P
ZOOM TELE
ZOOM WIDE
ZOOM COM
CN655 5P
CN652 2P
CN653 2P
M905 ZOOM
M906 FOCUS
FOCUS SENS
LENS BLOCK
ZOOM SWITCH
FP-267
W502 23P
K IN
K OUT
LI (+)
TALLY
SS 4.9V
DATA TO MASTER
REMO CS
SYS RESET
SS GND
LCD CS /LED CONT
DATA TO SLVE
FP-308
VK-10P
CN950 20P MD ZIF
W501 20P
CHASSIS GND
DATA TO SLAVE
FP-296
DK-6P
W951 15P
W670 15P
FP-297
CK-40P
CN670 2P
LI 3V
SS GND
LS-34
CN961 2P
LI-18P
W671 4P
FP-298
W680 4P
ZK-10P
W953 6P
W922 6P
ED-20P
W952 3P
W960 3P
SIRCS IN
RM-23P
AF-54P
W801 17P
CAM 5V
CN801 4P
J CS
J SI
J SCK
TO J IG

4-2. PRINTED WIRING BOARDS A

THIS NOTE IS COMMON FOR
AND SCHEMATIC DIAGRAMS.
(In addition to this, the necess

- **For printed wiring boards.**
- ● : Through hole.
- ▨ : Pattern from the side which ena
- ▨ : Pattern of the rear side.*
- Circled numbers refer to waveforms.

- **For schematic diagram.**
- Caution when replacing chip parts.
  New parts must be attached after rem
  Be careful not to heat the minus s
  because it is damaged by the heat.
- All resistors are in ohms, 1/10W or
  kΩ: 1000Ω, MΩ: 1000kΩ.
- All capacitors are in μF unless otherwi
  50V or less are not indicated except
  tantalums.
- All variable and adjustable resistors
  unless otherwise noted.
- : nonflammable resistor.
- : fusible resistor.
- ☐ : panel designation.
- △ : internal component.
- ☐ : adjustment for repair.*
- ▬ : B + Line*
- Circled numbers refer to waveforms.*
- : IN/OUT direction of B (+, –) li

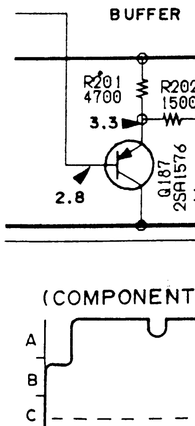
Note: The components identified by r
line with mark ⚠ are critical fo
Replace only with part number s

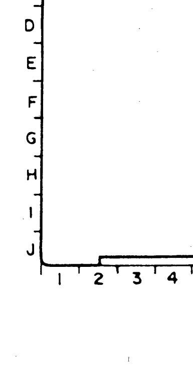
When indicating parts by reference number, please include the board name.

* Indicated by the color red.

[SEMICONDUCTOR LOCATION]

In this service manual, the mounted
semiconductors (IC, transistor, diodes) are
shown below. This enables to find the lo
easily when servicing.


Q187(E
BUFFER
R201
4700
R202
1500
3.3
2.8
Q187
2SA1576


(COMPONENT
A
B
C
D
E
F
G
H
I
J
1
2
3
4

4-2. PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

THIS NOTE IS COMMON FOR PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS.

(In addition to this, the necessary note is printed in each block.)

- **For printed wiring boards.**
- ● : Through hole.
- ▨ : Pattern from the side which enables seeing.
- ▩ : Pattern of the rear side. *
- Circled numbers refer to waveforms.

- **For schematic diagram.**
- Caution when replacing chip parts.
  New parts must be attached after removal of chip.
  Be careful not to heat the minus side of tantalum capacitor, because it is damaged by the heat.
- All resistors are in ohms, 1/10W or 1/16W unless otherwise noted.
  kΩ: 1000Ω, MΩ: 1000kΩ.
- All capacitors are in μF unless otherwise noted. pF : μμF.
  50V or less are not indicated except for electrolytics and tantalums.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
- : nonflammable resistor.
- : fusible resistor.
- ☐ : panel designation.
- △ : internal component.
- ☐ : adjustment for repair. *
- ━ : B + Line *
- Circled numbers refer to waveforms. *
- ➯ : IN/OUT direction of B (+, –) line. *

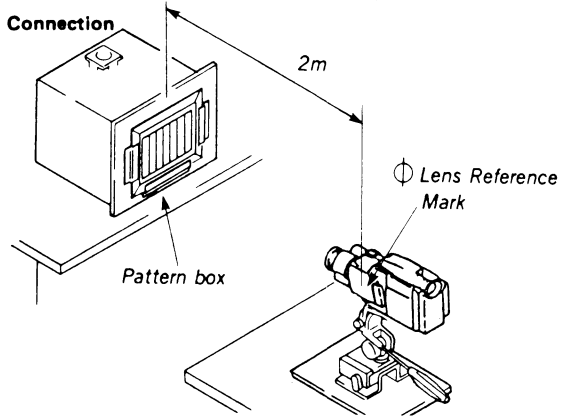
Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

When indicating parts by reference number, please include the board name.

* Indicated by the color red.

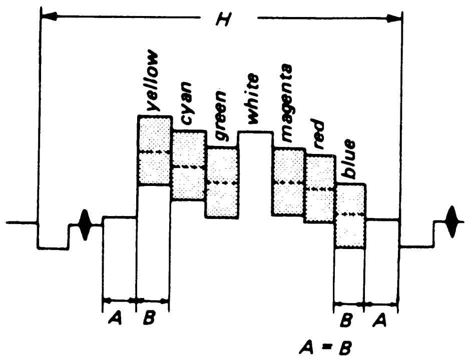
- **For voltage and waveforms. (CAM REC mode)**
- Voltage and waveform measuring conditions: *
  (1) Sample object: Pattern box color bars. *
  (2) Voltage values: Relative to ground, measured with a DC digital multimeter (impedance 10M-ohm or more). *

1. Connection



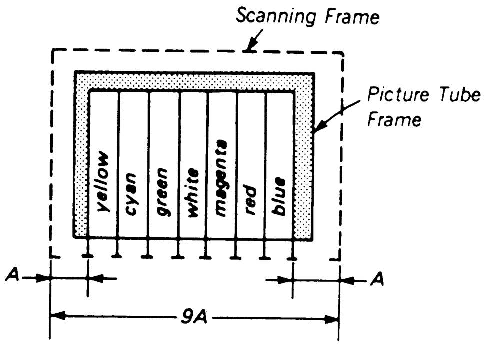
2m
Lens Reference Mark
Pattern box

2. Adjust the zooming of camera and the tripod so that the output waveform of Fig. a and the picture of Fig. b can be obtain.



H
yellow
cyan
green
white
magenta
red
blue
A
B
B
A
A = B

Fig. a Video output waveform.



Scanning Frame
Picture Tube Frame
yellow
cyan
green
white
magenta
red
blue
A
A
9A

Fig. b Picture of TV monitor screen

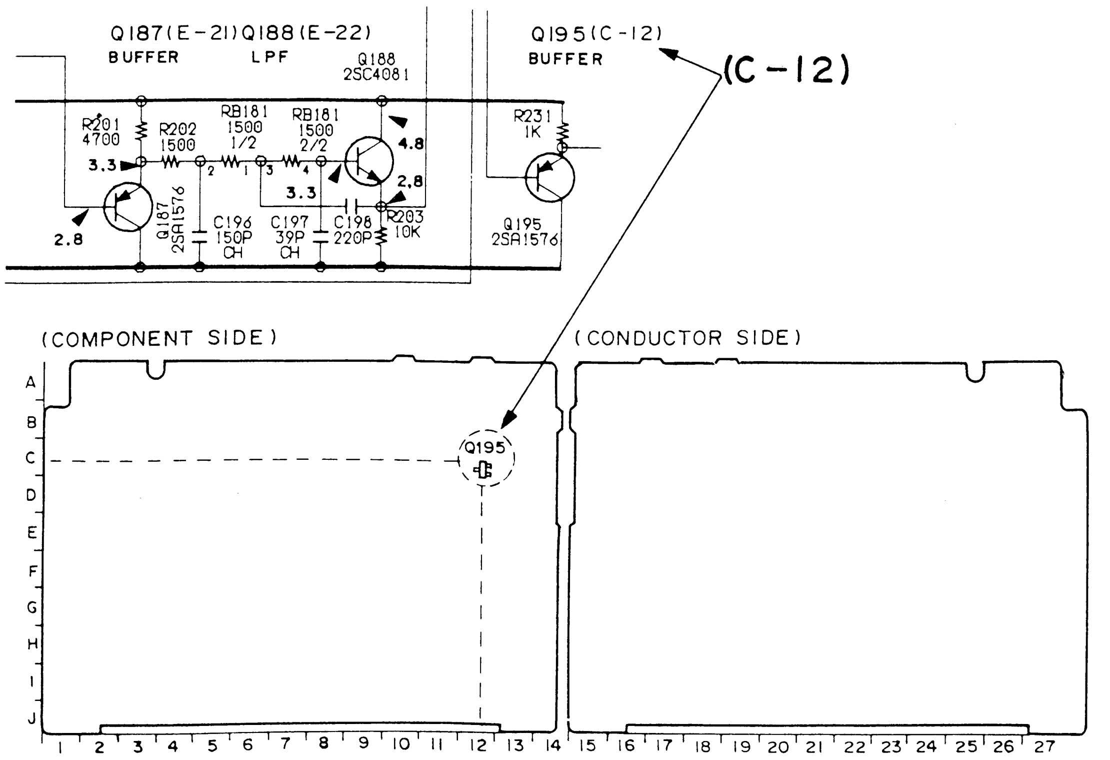
- **For voltage and waveforms. (REC/PB mode)**
- Voltages are dc between ground and measurement points. *
- Readings are taken with a color-bar signal input. *
- Readings are taken with a digital multimeter (DC10MΩ). *
- Voltage variations may be noted due to normal production tolerances. *

Precautions for replacement of CCD imager block.

- With a pair of IC101 (CCD imager) on the CD-20P complete board and IC001 (corrector ROM) on the DT-77P complete board, it is used a repair part of the CCD imager block.
  Since corrector ROM IC is manufactured to match the CCD imager, replacement of a single unit of the CCD imager corrector ROM cannot be allowed.
- When both a CCD imager and the corrector ROM, replace both the CCD imager and the corrector ROM, when a corrector ROM is not mounted on the service set, install a corrector ROM which is supplied anew.
- IC101 (CCD imager) is not mounted on the CD-20P complete board to be supplied as a repair part, and IC001 (corrector ROM) is not mounted on the DT-77P complete board to be supplied as a repair part. When the respective boards are replaced, remove the respective ICs from the old boards and install them to the new once respectively.
- After the CCD imager block has been replaced, perform the entire adjustments of the camera section.
- CCD imager is structurally in case of being broken down by static electricity.
  For this reason, take care to handle it as well as MOS IC. Moreover, care should be taken for dust not to be stuck on the light reseiving section and for strong light not to get into there.

[SEMICONDUCTOR LOCATION]

In this service manual, the mounted locations of the semiconductors (IC, transistor, diodes) are indicated in red sa shown below. This enables to find the location on the board easily when servicing.



Q187(E-21)Q188(E-22)
BUFFER
LPF
Q188
2SC4081
R201
4700
R202
1500
RB181
1500
1/2
RB181
1500
2/2
3.3
4.8
2.8
3.3
2.8
Q187
2SA1576
C196
150P
CH
C197
39P
CH
C198
220P
R203
10K
Q195(C-12)
BUFFER
(C-12)
R231
1K
Q195
2SA1576
(COMPONENT SIDE)
(CONDUCTOR SIDE)
Q195
A
B
C
D
E
F
G
H
I
J
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
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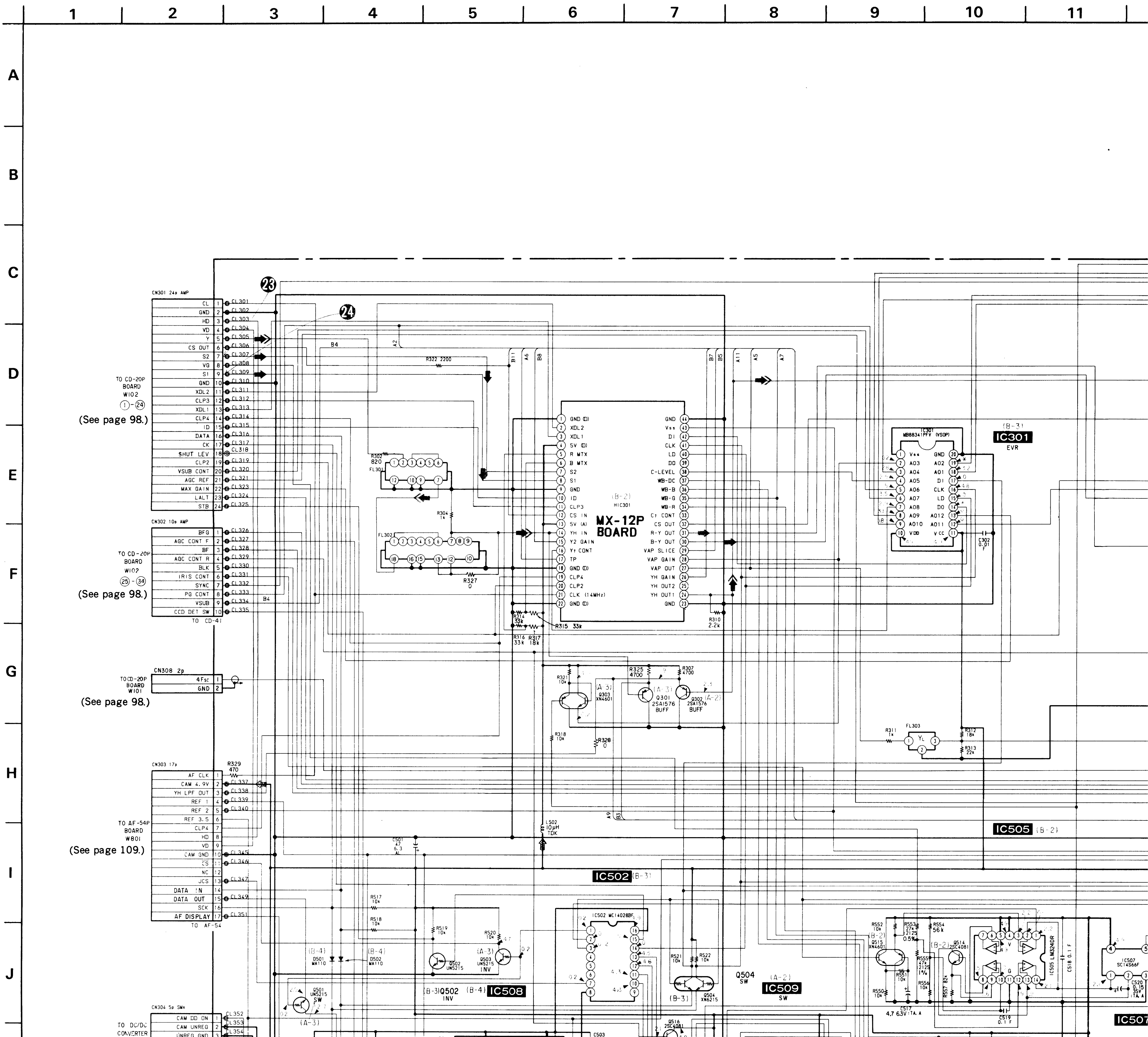
27

[Semiconductor for Correction List Display]
Part code and part name of the semiconductor for correction of the print board is described in the space of each print figure. Use this list when ordering parts.

CD-20P (CCD IMAGER), VC-67P (CAMERA PROCESS, ZOOM/FOCUS) SCHEMATIC DIAGRAM

—Ref. No. CD-20P, VC-67P BOARDS : 1000 series—


1
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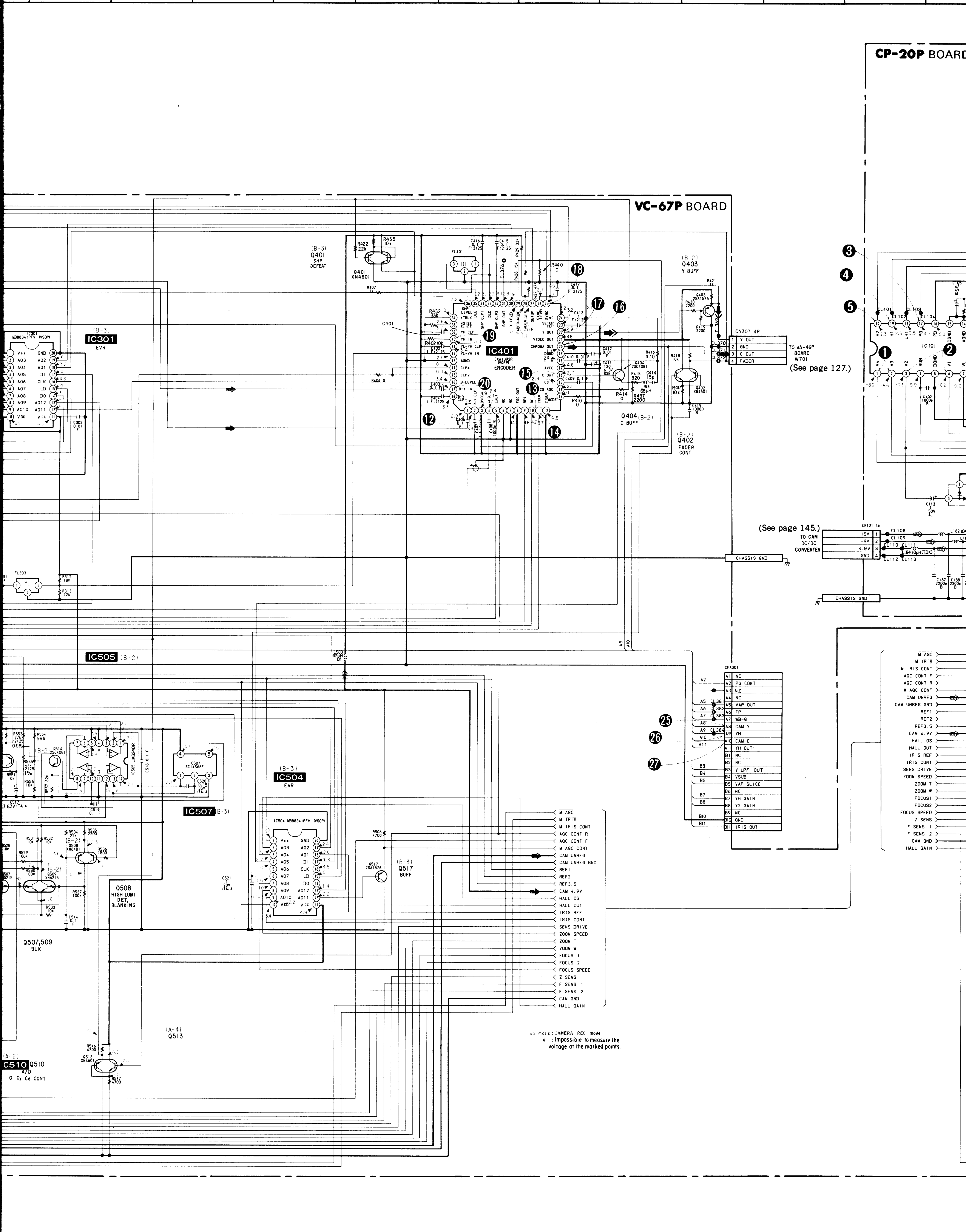
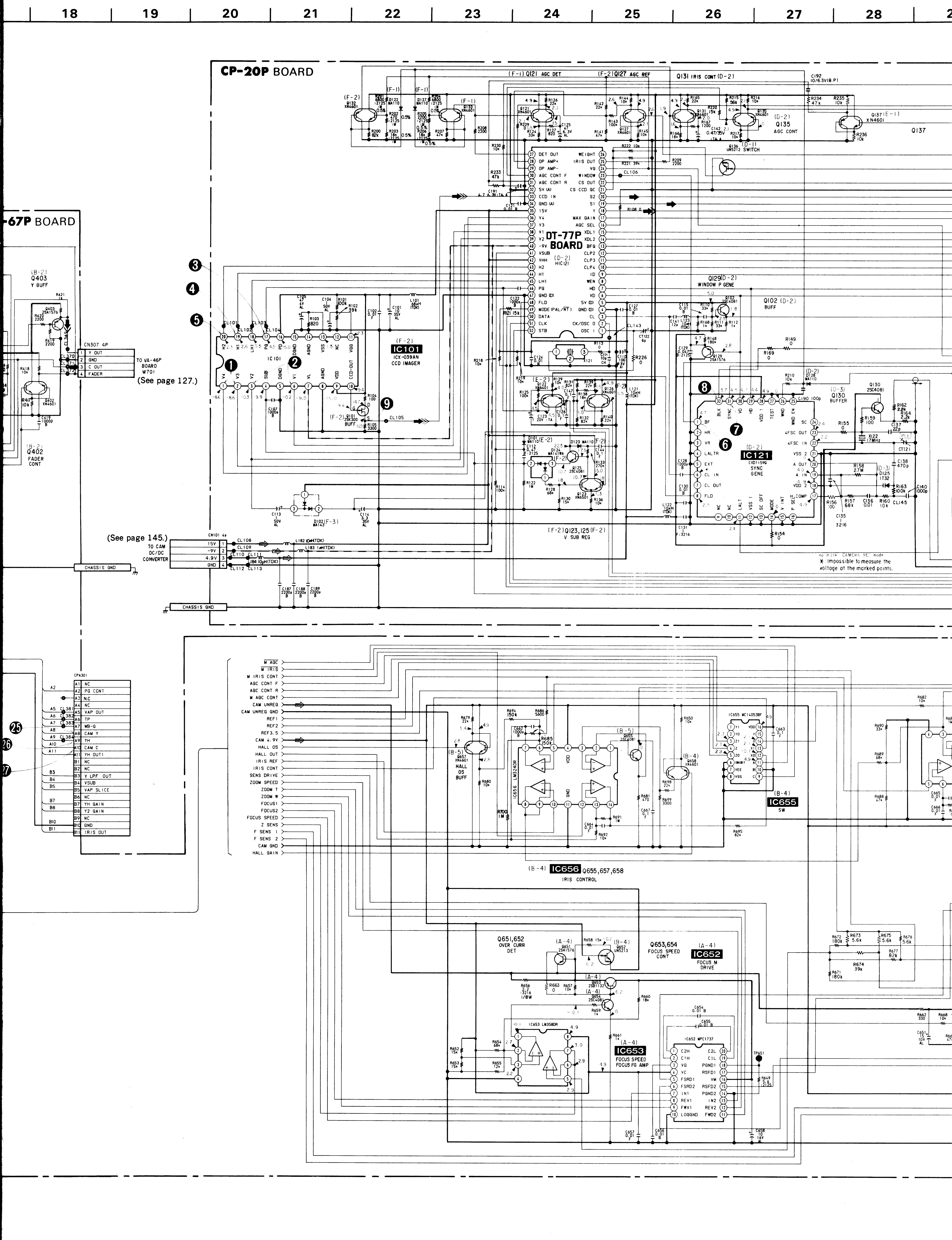
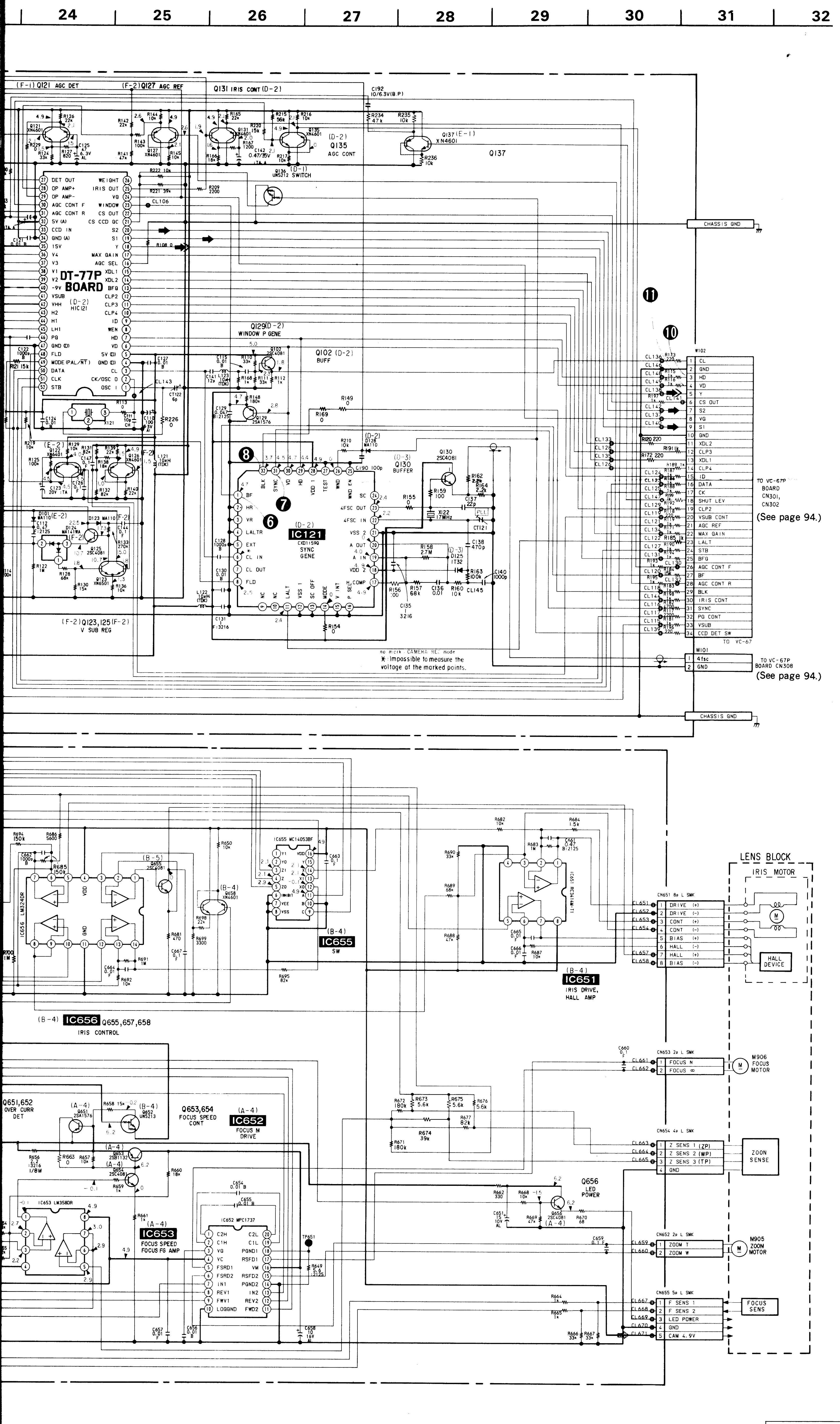
3
4
5
6
7
8
9
10
11
A
B
C
D
E
F
G
H
I
J
K
L
M
N
O
CN301 24P AMP
CL
GND
HD
VD
Y
CS OUT
S2
VG
S1
GND
XDL2
CLP3
XDL1
CLP4
ID
DATA
CK
SHUT LEV
CLP2
VSUB CONT
AGC REF
MAX GAIN
LALT
STB
TO CD-20P BOARD W102 ①-㉔
(See page 98.)
CN302 10P AMP
BFG
AGC CONT F
BF
AGC CONT R
BLK
IRIS CONT
SYNC
PG CONT
VSUB
CCD DET SW
TO CD-41
TO CD-20P BOARD W102 ㉕-㉞
(See page 98.)
CN308 2P
4Fsc
GND
TO CD-20P BOARD W101
(See page 98.)
CN303 17P
AF CLK
CAM 4.9V
YH LPF OUT
REF 1
REF 2
REF 3.5
CLP4
HD
VD
CAM GND
CS
NC
JCS
DATA IN
DATA OUT
SCK
AF DISPLAY
TO AF-54
TO AF-54P BOARD W801
(See page 109.)
CN304 5P SMK
CAM DD ON
CAM UNREG
UNREG GND
CAM 4.9V
CAM GND
TO DC/DC CONVERTER
(See page 145.)
CN305 12P
SS GND
CAM CS
DATA TO MODE
DATA TO CAM
SCK
SYSTEM RESET
AF DISPLAY
CAM DD ON
LANC TO CAM
CAM TO LANC
NC
SS 4.9V
TO VTR
TO VA-46P BOARD W702
(See page 127.)
CHASSIS GND
CN306 3P SMK
ZOOM TELE
ZOOM WIDE
ZOOM COM
T
W
ZOOM SWITCH
㉓
㉔
㉑
㉒
MX-12P BOARD
(B-2) MIC301
GND (D)
XDL2
XDL1
5V (D)
R MTX
B MTX
S2
S1
GND
ID
CLP3
CS IN
5V (A)
YH IN
Y2 GAIN
Y1 CONT
TP
GND (D)
CLP4
CLP2
CLK (14MHz)
GND (D)
Vss
DI
CLK
LD
DO
C-LEVEL
WB-DC
WB-B
WB-G
WB-R
C1 CONT
CS OUT
R-Y OUT
B-Y OUT
VAP SLICE
VAP GAIN
VAP OUT
YH GAIN
YH OUT2
YH OUT1
R322 2200
R303 820
FL301
FL302
R304 1k
R327 0
R314 33k
R315 33k
R316 33k
R317 18k
R310 2.2k
IC301 MB88341PFV (VSOP)
(B-3)
IC301
EVR
C302 0.01 F
R321 10k
Q303 XN4601
R325 4700
R307 4700
Q301 2SA1576 BUFF
Q302 2SA1576 BUFF
R318 10k
R328 0
R311 1k
FL303
YL
R312 18k
R313 22k
R329 470
L502 10μH TDK
C501 47 6.3 AL
IC505 (B-2)
IC502 (B-3)
IC502 MC14028BF
R517 10k
R518 10k
R519 10k
R520 10k
D501 MA110
D502 MA110
Q502 UN5215
Q503 UN5215 INV
(B-3) Q502 (B-4)
INV
IC508
Q501 UN5215 SW
R521 10k
R522 10k
Q504 XN6215
Q504 SW
(A-2)
IC509
SW
R552 10k
Q515 XN4601
R553 27k
R554 56k
Q514 2SC4081
IC505 LM324DR
C518 0.1 F
IC507 SC14566F
IC507
C517 4.7 6.3V
C519 0.1 F
X501 8MHz
IC508 S8054ALB-LW
RESET
C502 0.01 F
C503 1 F 2125
Q516 2SC4081
R510 10k
Q516 AGC CONT SW
R514 10k
R515 1M
D503 MA110
R513 100k
D504 MA110
R511 10k
R562 10k
IC509 MC14066
R527 100k
R528 10k
R529 100k
Q507 UN5215
R530 100k
R531 10k
R532 10k
Q509 XN6215
R534 22k
R535 2200
Q508 XN6401
R536 1500
R537 100k
R533 10k
C513 3.3 6.3V
C511 3.3 6.3V
C514 0.1 F
Q508 HIGH LUMI DET. BLANKING
Q507,509 BLK
C509 0.01 B
IC501
MC68HC11E9FU
ZOOM/AWB μ COM
CAM POWER
NORM/ADJ
FOCUS ∞
ZOOM T
ZOOM W
RESET
XIRQ
IRQ
LANC IN
ZOOM SENS
HALL SENS
F SENS
DECODE
R SELECT
G SELECT
B SELECT
DISCHG
R560 10k
R503 10k
R504 10k
R501 22k
R502 22k
CL342
CL677
R509 10k
R508 10k
CL355
Q505 XN6215 INV
Q506 XN6213
Q506 INV (B-4)
IC510 LM324DR
R523 39k
R524 10k
C507 0.01 F
C506 0.1 F
C508 0.22 35V
Q510 2SC4081
R526 150k
R525 10k
C510 10 16V AL
IC510
Q510 A/D G Cy Ce CONT
R546 4700
Q513 XN4601
R547 4700
(A-4) Q513


CP-20P BOARD
VC-67P BOARD
IC301 EVR
IC401 CXA1092R ENCODER
Q401 XN4601 SHP DEFEAT
Q403 Y BUFF
Q404 C BUFF
Q402 FADER CONT
CN307 4P
Y OUT
GND
C OUT
FADER
TO VA-46P BOARD W701
(See page 127.)
(See page 145.)
TO CAM DC/DC CONVERTER
CN101 4P
15V
-9V
4.9V
GND
CHASSIS GND
IC101
IC505
IC507 SC14566F
IC504 EVR
CPA301
A1 NC
A2 PG CONT
A3 NC
A4 NC
A5 VAP OUT
A6 TP
A7 WB-G
A8 CAM Y
A9 YH
A10 CAM C
A11 YH OUT1
B1 NC
B2 NC
B3 Y LPF OUT
B4 VSUB
B5 VAP SLICE
B6 NC
B7 YH GAIN
B8 Y2 GAIN
B9 NC
B10 GND
B11 IRIS OUT
M AGC
M IRIS
M IRIS CONT
AGC CONT R
AGC CONT F
M AGC CONT
CAM UNREG
CAM UNREG GND
REF1
REF2
REF3.5
CAM 4.9V
HALL OS
HALL OUT
IRIS REF
IRIS CONT
SENS DRIVE
ZOOM SPEED
ZOOM T
ZOOM W
FOCUS 1
FOCUS 2
FOCUS SPEED
Z SENS
F SENS 1
F SENS 2
CAM GND
HALL GAIN
Q517 2SA1576 BUFF
Q508 HIGH LUMI DET, BLANKING
Q507,509 BLK
Q513
Q510
IC510 A/D G Cy Ce CONT

no mark : CAMERA REC mode
＊ : Impossible to measure the voltage at the marked points.

CAMERA (1) **CAMERA (1)**


18
19
20
21
22
23
24
25
26
27
28
CP-20P BOARD
-67P BOARD
(B-2) Q403 Y BUFF
(B-2) Q402 FADER CONT
CN307 4P
Y OUT
GND
C OUT
FADER
TO VA-46P BOARD W701
(See page 127.)
(F-1) Q121 AGC DET
(F-2) Q127 AGC REF
Q131 IRIS CONT (D-2)
Q135 AGC CONT
Q137
Q136 UN5212 SWITCH
DT-77P BOARD
(D-2) HIC121
(F-2) IC101
ICX-039AN CCD IMAGER
(F-2) Q101 2SK300 BUFF
CL105
Q129 (D-2) WINDOW P GENE
Q102 (D-2) BUFF
Q130 2SC4081 BUFFER
(D-2) IC121
CXD1159Q SYNC GENE
(F-2) Q123,125 (F-2) V SUB REG
(See page 145.)
TO CAM DC/DC CONVERTER
CN101 4p
15V
-9V
4.9V
GND
CHASSIS GND
CHASSIS GND
※ Impossible to measure the voltage at the marked points.
CPA301
M AGC
M IRIS
M IRIS CONT
AGC CONT F
AGC CONT R
M AGC CONT
CAM UNREG
CAM UNREG GND
REF1
REF2
REF3.5
CAM 4.9V
HALL OS
HALL OUT
IRIS REF
IRIS CONT
SENS DRIVE
ZOOM SPEED
ZOOM T
ZOOM W
FOCUS1
FOCUS2
FOCUS SPEED
Z SENS
F SENS 1
F SENS 2
CAM GND
HALL GAIN
(B-5) Q657 XN4601 HALL OS BUFF
(B-4) IC656 Q655,657,658 IRIS CONTROL
IC656 LM324OR
(B-4) IC655 SW
IC655 MC14053BF
Q651,652 OVER CURR DET
Q653,654 FOCUS SPEED CONT
(A-4) IC652 FOCUS M DRIVE
IC652 MPC1737
(A-4) IC653 FOCUS SPEED FOCUS FG AMP
IC653 LM358DR
TP651


24
25
26
27
28
29
30
31
32
(F-1) Q121 AGC DET
(F-2) Q127 AGC REF
Q131 IRIS CONT (D-2)
C192 10/6.3V (B.P)
(D-2) Q135 AGC CONT
Q137 (E-1) XN4601
Q136 (D-1) UN5212 SWITCH
DT-77P BOARD
(D-2) HIC121
Q129 (D-2) WINDOW P GENE
Q102 (D-2) BUFF
Q130 (D-3) BUFFER
(D-2) IC121 CXD1159Q SYNC GENE
(F-2) Q123, 125 (F-2) V SUB REG
no mark: CAMERA REC mode
✱: Impossible to measure the voltage at the marked points.
CHASSIS GND
W102
TO VC-67P BOARD CN301, CN302
(See page 94.)
W101
TO VC-67P BOARD CN308
(See page 94.)
LENS BLOCK
IRIS MOTOR
HALL DEVICE
(B-4) IC655 SW
IC655 MC14053BF
(B-4) IC651 IRIS DRIVE, HALL AMP
IC651 RC1414-11
(B-4) IC656 Q655, 657, 658 IRIS CONTROL
IC656 LM324DR
CN651 8P L SMK
DRIVE (+)
DRIVE (−)
CONT (+)
CONT (−)
BIAS (+)
HALL (−)
HALL (+)
BIAS (−)
CN653 2P L SMK
FOCUS N
FOCUS ∞
M906 FOCUS MOTOR
CN654 4P L SMK
Z SENS 1 (ZP)
Z SENS 2 (WP)
Z SENS 3 (TP)
GND
ZOOM SENSE
Q656 LED POWER
CN652 2P L SMK
ZOOM T
ZOOM W
M905 ZOOM MOTOR
CN655 5P L SMK
F SENS 1
F SENS 2
LED POWER
GND
CAM 4.9V
FOCUS SENS
Q651, 652 OVER CURR DET
Q653, 654 FOCUS SPEED CONT
(A-4) IC652 FOCUS M DRIVE
IC652 MPC1737
(A-4) IC653 FOCUS SPEED FOCUS FG AMP
IC653 LM358DR
TP651
6
7
8
10
11

• Signal path

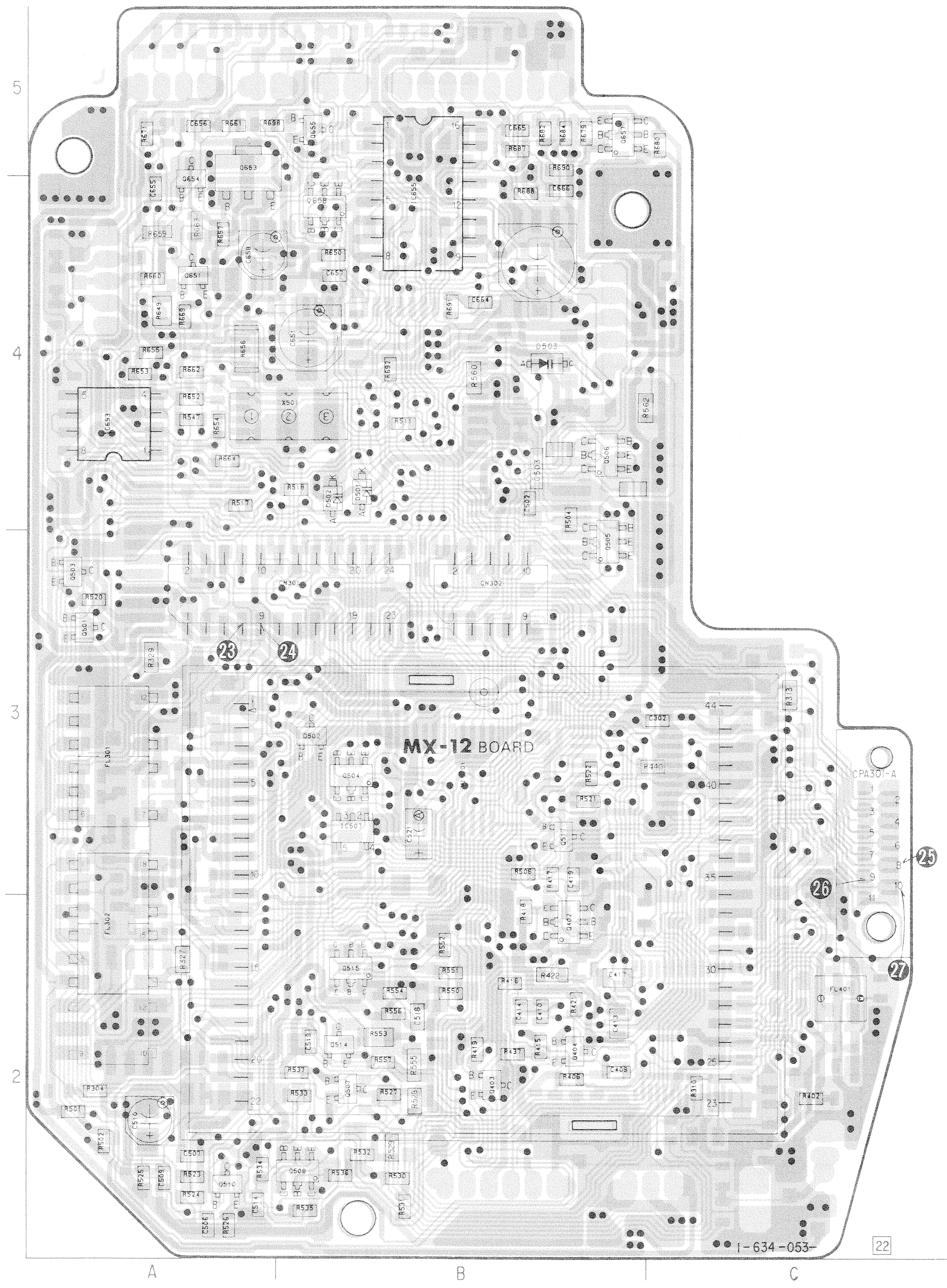
	VIDEO Signal		
	CHROMA	Y	Y/CHROMA
REC	➡	⇛	⇛

Be sure to always read "Precautions for replacement of CCD imager block" in page93 when replacing the CD-20P board, complete, DT-77P board, complete and CCD imager block (IC101 on the CD-20P board and IC001 on the DT-77P board).

CD-20P (CCD IMAGER), VC-67P (CAMERA PROCESS, ZOOM/FOCUS) PRINTED WIRING BOARDS

—Ref. No. CD-20P, VC-67P BOARDS : 1000 series—

VC-67P BOARD (COMPONENT SIDE)


5
4
3
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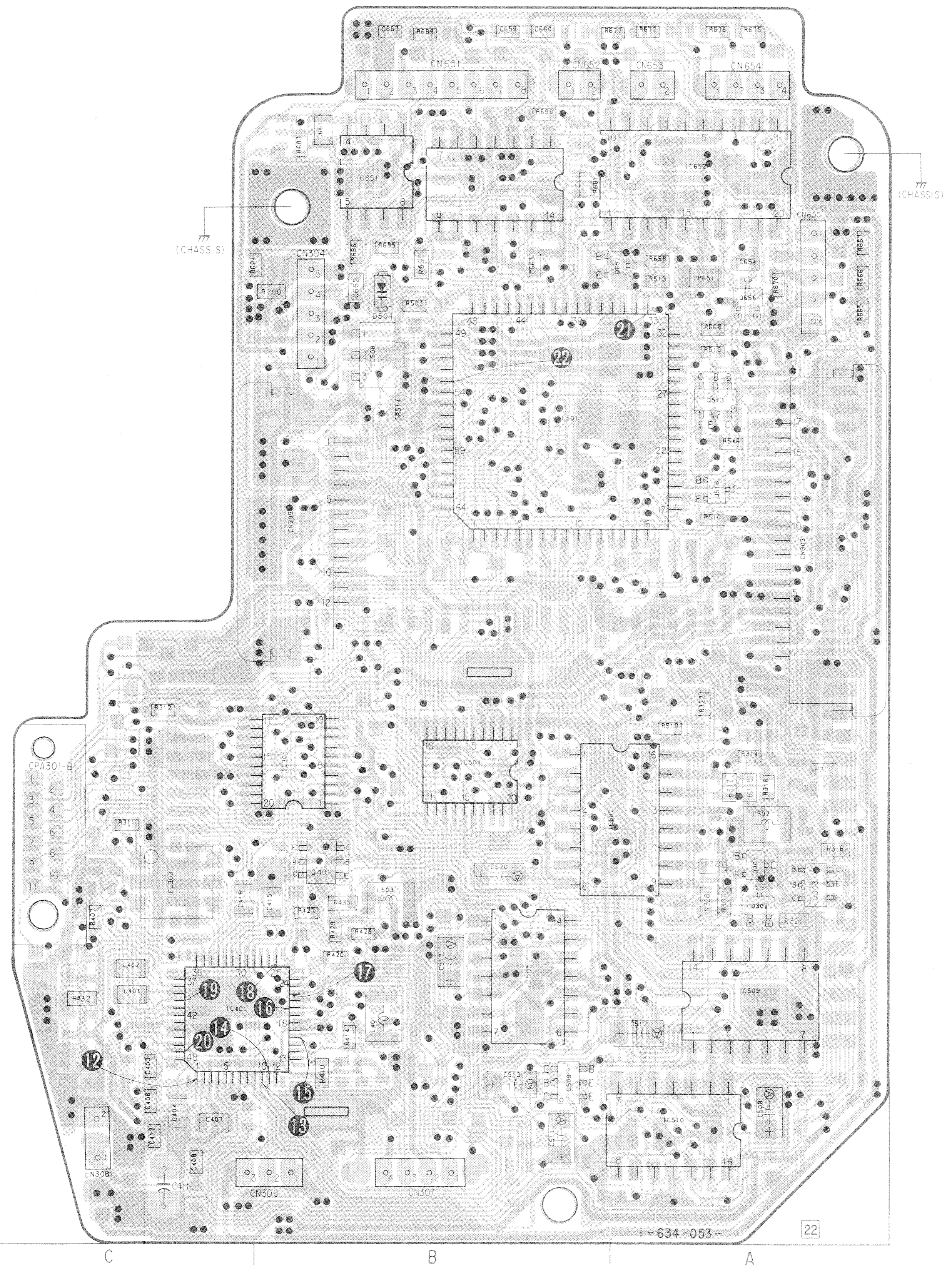
A
B
C
MX-12 BOARD
CPA301-A
23
24
25
26
27
1-634-053-
22

VC-67P BOARD (CONDUCTOR SIDE)


(CHASSIS)
(CHASSIS)
CN651
CN652
CN653
CN654
CN655
CN304
CPA301-B
CN308
CN306
CN307
IC401
12
13
14
15
16
17
18
19
20
21
22
C
B
A
1-634-053-
22

DIODE

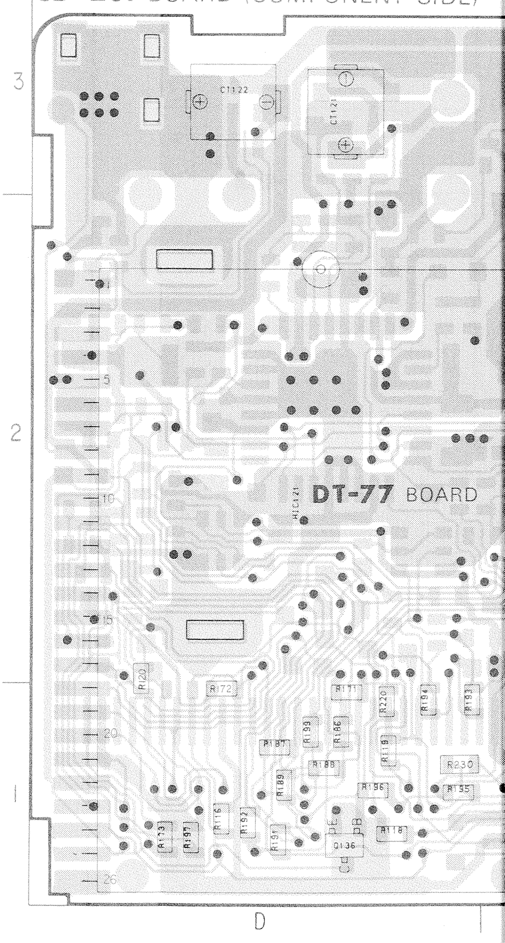
D501	8-719-404-46	DIODE MA110
D502	8-719-404-46	DIODE MA110
D503	8-719-404-46	DIODE MA110
D504	8-719-404-46	DIODE MA110

IC

IC301	8-759-946-00	IC MB88341PFV
IC401	8-752-038-XX	IC CXA1392R
IC501	8-759-037-58	IC MC68HC11E9FUSC400217
IC502	8-759-010-13	IC MC14028BF
IC504	8-759-946-00	IC MB88341PFV
IC505	8-759-998-96	IC LM324DR
IC507	8-759-030-74	IC SC14S66F
IC508	8-759-937-56	IC S-8054ALB-LM-S
IC509	8-759-932-54	IC MC14066BF
IC510	8-759-998-96	IC LM324DR
IC651	8-759-981-82	IC RC3414M
IC652	8-759-037-20	IC MPC1737M
IC653	8-759-998-98	IC LM358D
IC655	8-759-009-07	IC MC14053BF
IC656	8-759-998-96	IC LM324D

Q301
Q302
Q303
Q401
Q402
Q403
Q404
Q501
Q502
Q503
Q504
Q505
Q506
Q507
Q508
Q509
Q510
Q513
Q514
Q515
Q516
Q517
Q651
Q652
Q653

CD-20P BOARD (COMPONENT SIDE)


3
2
1
D
DT-77 BOARD

DIODE

D501	8-719-404-46	DIODE MA110
D502	8-719-404-46	DIODE MA110
D503	8-719-404-46	DIODE MA110
D504	8-719-404-46	DIODE MA110

IC

IC301	8-759-946-00	IC MB88341PFV
IC401	8-752-038-XX	IC CXA1392R
IC501	8-759-037-58	IC MC68HC11E9FUSC400217
IC502	8-759-010-13	IC MC14028BF
IC504	8-759-946-00	IC MB88341PFV
IC505	8-759-998-96	IC LM324DR
IC507	8-759-030-74	IC SC14S66F
IC508	8-759-937-56	IC S-8054ALB-LM-S
IC509	8-759-932-54	IC MC14066BF
IC510	8-759-998-96	IC LM324DR
IC651	8-759-981-82	IC RC3414M
IC652	8-759-037-20	IC MPC1737M
IC653	8-759-998-98	IC LM358D
IC655	8-759-009-07	IC MC14053BF
IC656	8-759-998-96	IC LM324D

TRANSISTOR

Q301	8-729-905-23	TRANSISTOR 2SA1576-R
Q302	8-729-905-23	TRANSISTOR 2SA1576-R
Q303	8-729-402-84	TRANSISTOR XN4601
Q401	8-729-402-84	TRANSISTOR XN4601
Q402	8-729-402-84	TRANSISTOR XN4601
Q403	8-729-905-23	TRANSISTOR 2SA1576-R
Q404	8-729-905-35	TRANSISTOR 2SC4081-R
Q501	8-729-420-50	TRANSISTOR UN5215
Q502	8-729-420-50	TRANSISTOR UN5215
Q503	8-729-420-50	TRANSISTOR UN5215
Q504	8-729-403-10	TRANSISTOR XN6215
Q505	8-729-403-10	TRANSISTOR XN6215
Q506	8-729-420-07	TRANSISTOR XN6213
Q507	8-729-420-50	TRANSISTOR UN5215
Q508	8-729-402-78	TRANSISTOR XN6401
Q509	8-729-403-10	TRANSISTOR XN6215
Q510	8-729-905-35	TRANSISTOR 2SC4081-R
Q513	8-729-402-84	TRANSISTOR XN4601
Q514	8-729-905-35	TRANSISTOR 2SC4081-R
Q515	8-729-402-84	TRANSISTOR XN4601
Q516	8-729-905-35	TRANSISTOR 2SC4081-R
Q517	8-729-905-23	TRANSISTOR 2SA1576-R
Q651	8-729-905-23	TRANSISTOR 2SA1576-R
Q652	8-729-402-42	TRANSISTOR UN5213
Q653	8-729-920-79	TRANSISTOR 2SB1132-T100-QR
Q654	8-729-905-35	TRANSISTOR 2SC4081-R
Q655	8-729-905-35	TRANSISTOR 2SC4081-R
Q656	8-729-905-35	TRANSISTOR 2SC4081-R
Q657	8-729-402-84	TRANSISTOR XN4601
Q658	8-729-402-84	TRANSISTOR XN4601

DIODE

D101	8-719-404-46	DIODE MA110
D102	8-719-404-52	DIODE MA143
D122	8-719-404-46	DIODE MA110
D123	8-719-404-46	DIODE MA110
D124	8-719-404-32	DIODE MA141WA
D125	8-719-949-46	DIODE 1T32
D127	8-719-404-46	DIODE MA110
D128	8-719-404-46	DIODE MA110

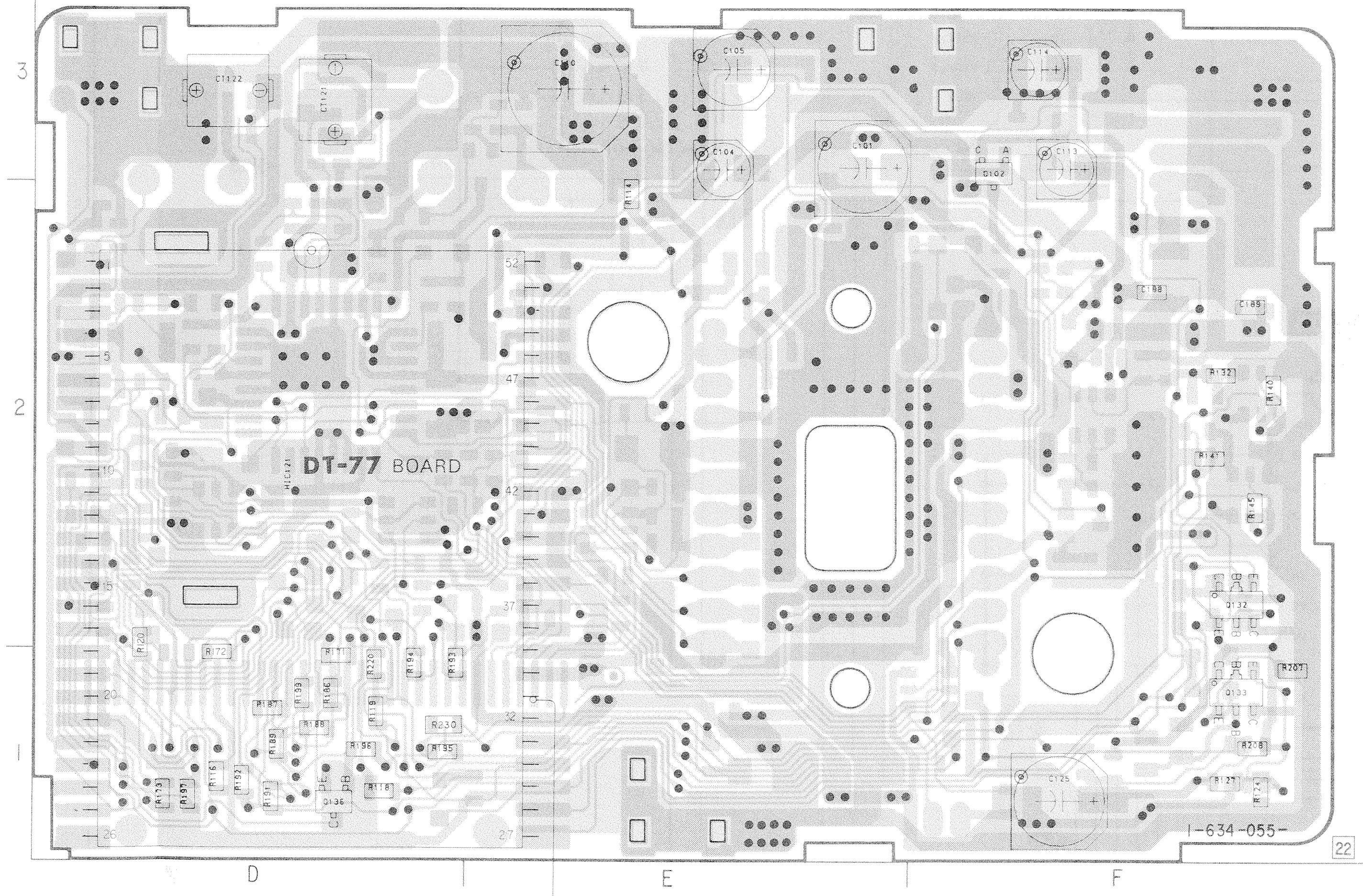
IC

IC101	8-752-604-72	IC ICX039AN-2
IC121	8-752-326-08	IC CXD1159Q

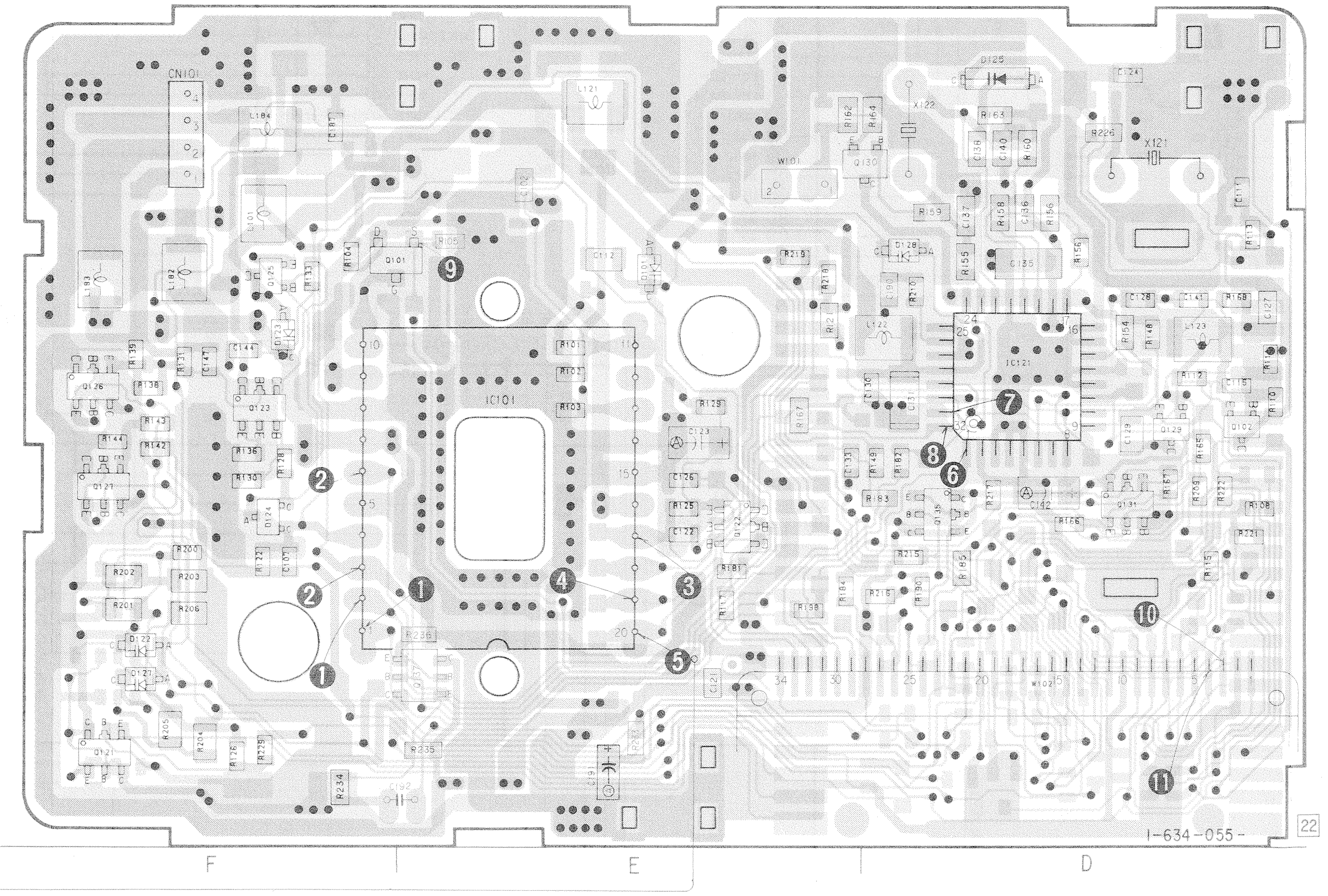
TRANSISTOR

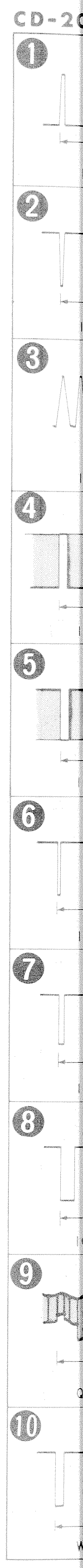
Q101	8-765-420-02	TRANSISTOR 2SK300-3
Q102	8-729-905-35	TRANSISTOR 2SC4081-R
Q121	8-729-402-84	TRANSISTOR XN4601
Q122	8-729-402-78	TRANSISTOR XN6401
Q123	8-729-402-19	TRANSISTOR XN6501
Q125	8-729-905-35	TRANSISTOR 2SC4081-R
Q126	8-729-402-84	TRANSISTOR XN4601
Q127	8-729-402-84	TRANSISTOR XN4601
Q129	8-729-905-23	TRANSISTOR 2SA1576-R
Q130	8-729-905-35	TRANSISTOR 2SC4081-R
Q131	8-729-402-84	TRANSISTOR XN4601
Q132	8-729-402-84	TRANSISTOR XN4601
Q133	8-729-402-84	TRANSISTOR XN4601
Q135	8-729-402-84	TRANSISTOR XN4601
Q136	8-729-402-45	TRANSISTOR UN5212
Q137	8-729-402-84	TRANSISTOR XN4601

CD-20P BOARD (COMPONENT SIDE)



CD-20P BOARD (CONDUCTOR SIDE)





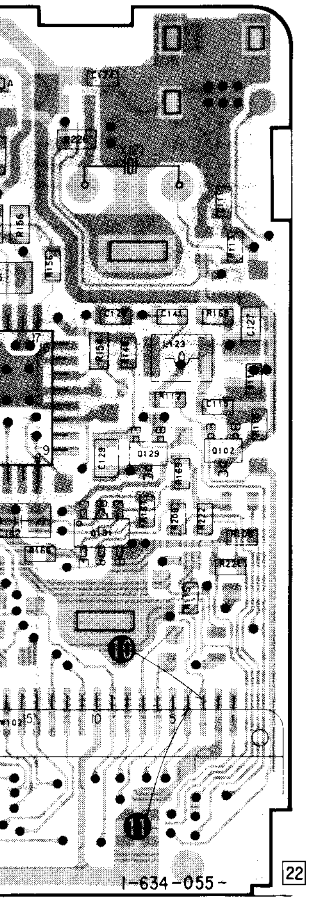
TRANSISTOR

420-02 TRANSISTOR 2SK300-3
905-35 TRANSISTOR 2SC4081-R
402-84 TRANSISTOR XN4601
402-78 TRANSISTOR XN6401
402-19 TRANSISTOR XN6501

905-35 TRANSISTOR 2SC4081-R
402-84 TRANSISTOR XN4601
402-84 TRANSISTOR XN4601
905-23 TRANSISTOR 2SA1576-R
905-35 TRANSISTOR 2SC4081-R

402-84 TRANSISTOR XN4601
402-84 TRANSISTOR XN4601
402-84 TRANSISTOR XN4601
402-84 TRANSISTOR XN4601
402-45 TRANSISTOR UN5212

402-84 TRANSISTOR XN4601



C122
R156
R155
C128
C141
R158
C127
Q123
C129
Q129
Q102
W102
5
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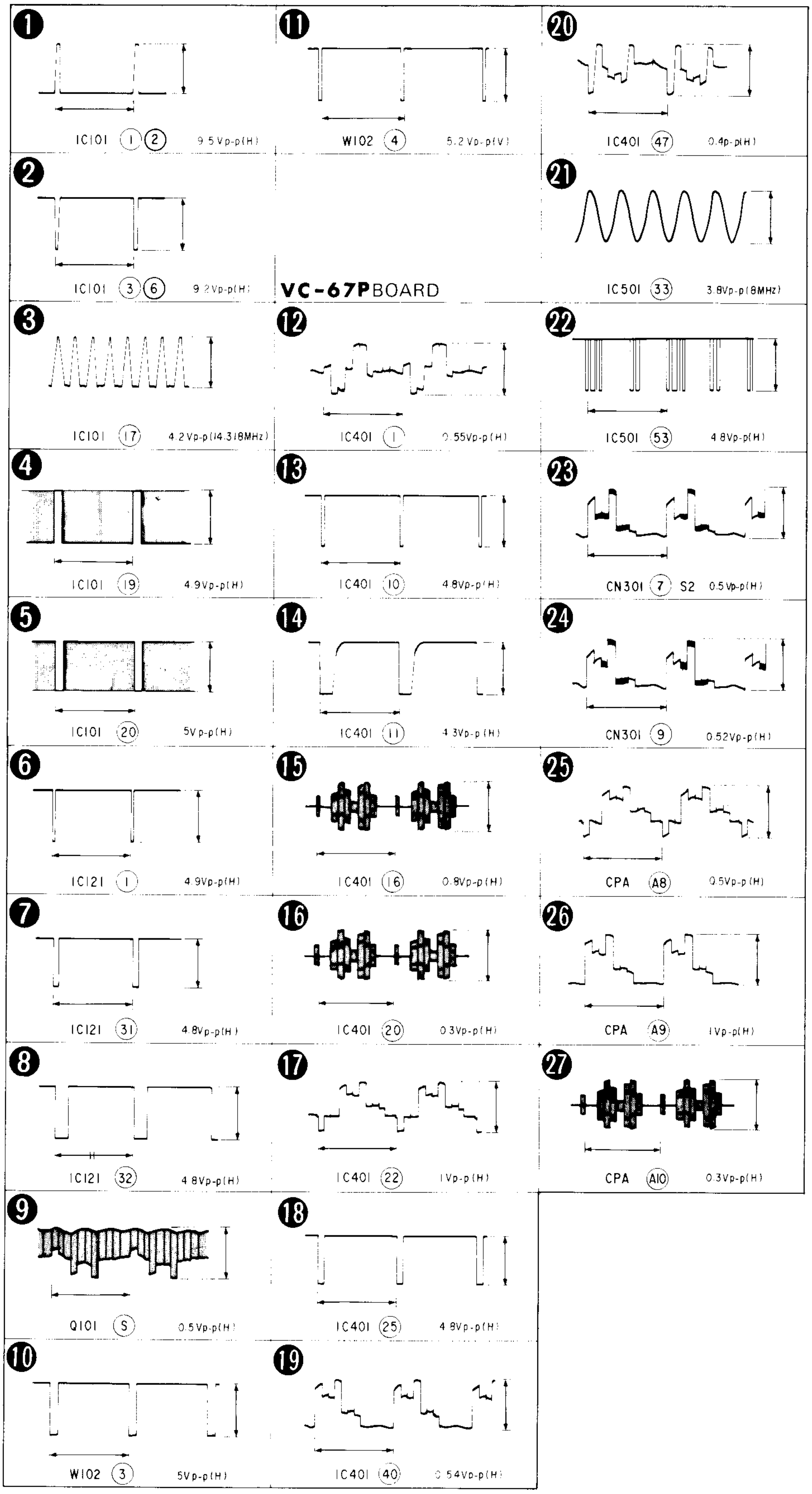
5
⑩
⑪
1-634-055-
22

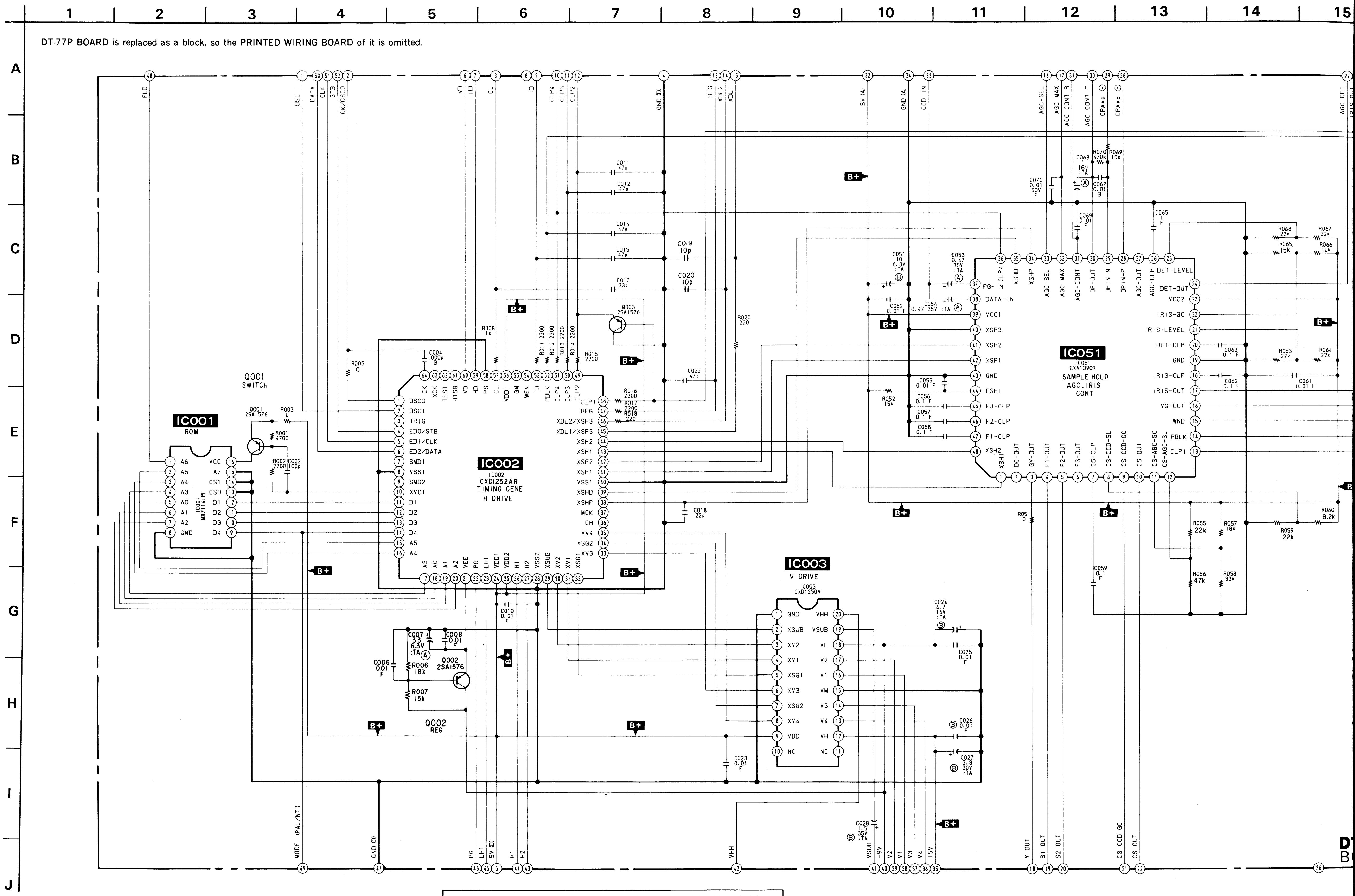
D

CD-20P BOARD



DT-77P (CCD DRIVE, TIMING GENERATOR), MX-12P (CAMERA MATRIX) SCHEMATIC DIAGRAMS

DT-77P BOARD is replaced as a block, so the PRINTED WIRING BOARD of it is omitted.



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12
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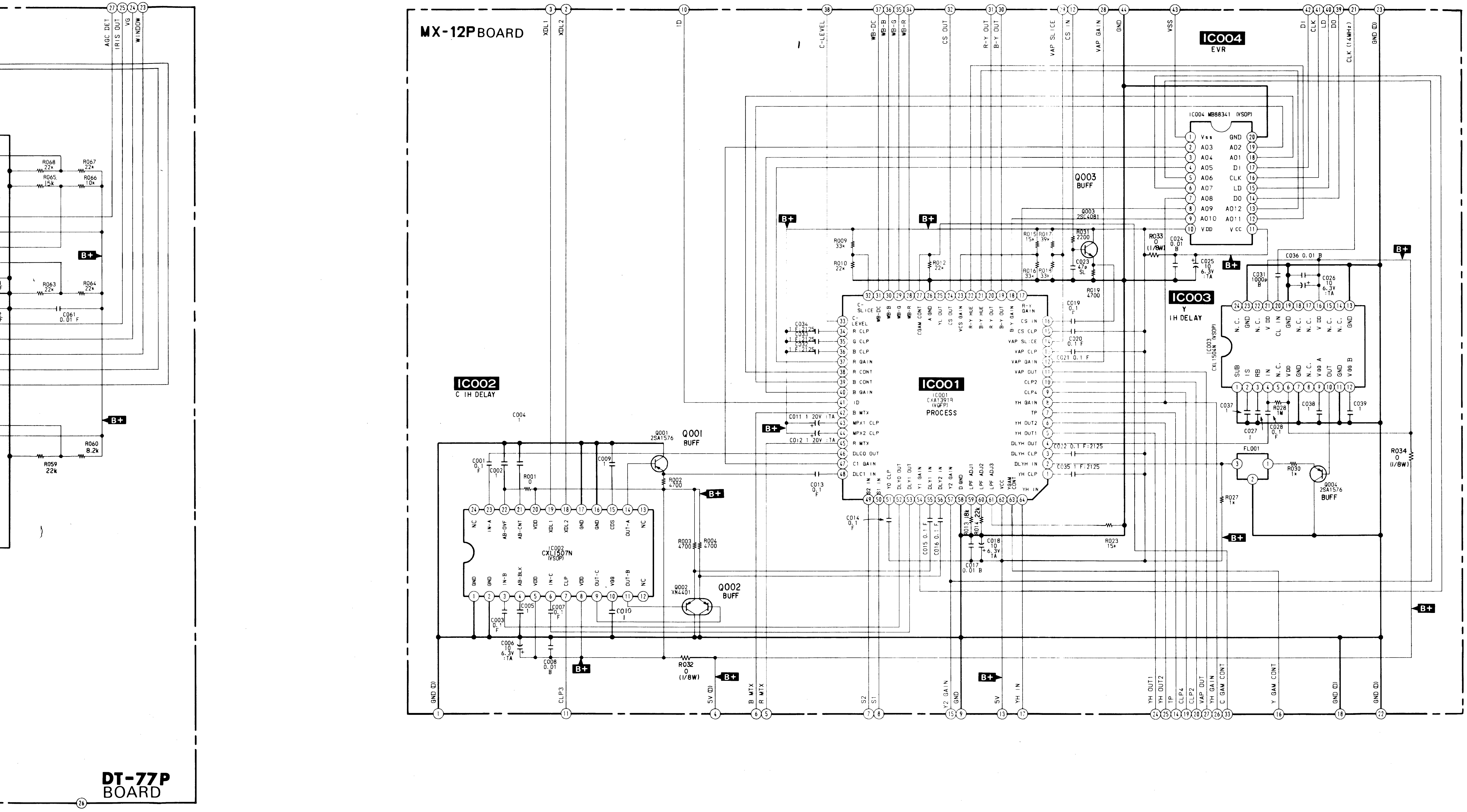
15
A
B
C
D
E
F
G
H
I
J
IC001
ROM
IC001 MB7114LPF
A6
A5
A4
A3
A0
A1
A2
GND
VCC
A7
CS1
CS0
D1
D2
D3
D4
Q001
SWITCH
Q001 2SA1576
R003 0
R001 4700
R002 2200
C002 100p
IC002
IC002 CXD1252AR
TIMING GENE
H DRIVE
OSCO
OSCI
TRIG
ED0/STB
ED1/CLK
ED2/DATA
SMD1
VSS1
SMD2
XVCT
D1
D2
D3
D4
A5
A4
CLP1
BFG
XDL2/XSH3
XDL1/XSP3
XSH2
XSH1
XSP2
XSP1
VSS1
XSHD
XSHP
MCK
CH
XV4
XSG2
XV3
C004 1000p B
R005 0
R008 1k
R011 2200
R012 2200
R013 2200
R014 2200
R015 2200
R016 2200
R017 2200
R018 220
C011 47p
C012 47p
C014 47p
C015 47p
C017 33p
C019 10p
C020 10p
C022 47p
C018 22p
R020 220
Q003 2SA1576
C010 0.01 F
C006 0.01 F
C007 3.3 6.3V :TA
C008 0.01 F
R006 18k
R007 15k
Q002 2SA1576
Q002
REG
IC003
V DRIVE
IC003 CXD1250N
GND
XSUB
XV2
XV1
XSG1
XV3
XSG2
XV4
VDD
NC
VHH
VSUB
VL
V2
V1
VM
V3
V4
VH
NC
C023 0.01 F
C024 4.7 16V :TA
C025 0.01 F
C026 0.01 F
C027 3.3 20V :TA
C028 1.5 35V :TA
IC051
IC051 CXA1390R
SAMPLE HOLD
AGC, IRIS
CONT
PG-IN
DATA-IN
VCC1
XSP3
XSP2
XSP1
GND
FSHI
F3-CLP
F2-CLP
F1-CLP
XSH2
DET-LEVEL
DET-OUT
VCC2
IRIS-GC
IRIS-LEVEL
DET-CLP
GND
IRIS-CLP
IRIS-OUT
VG-OUT
WND
PBLK
CLP1
C051 10 6.3V :TA
C052 0.01 F
C053 0.47 35V :TA
C054 0.47 35V :TA
C055 0.01 F
C056 0.1 F
C057 0.1 F
C058 0.1 F
R052 15k
C065 1 F
C067 0.01 B
C068 1 16V :TA
C069 0.01 F
C070 0.01 50V F
R069 10k
R070 470k
R063 22k
R064 22k
R065 15k
R066 10k
R067 22k
R068 22k
C061 0.01 F
C062 0.1 F
C063 0.1 F
R051 0
C059 0.1 F
R055 22k
R056 47k
R057 18k
R058 33k
R059 22k
R060 8.2k
B+
FLD
OSC I
DATA
CLK
STB
CK/OSCO
VD
HD
CL
ID
CLP4
CLP3
CLP2
GND (D)
BFG
XDL2
XDL1
5V (A)
GND (A)
CCD IN
AGC-SEL
AGC MAX
AGC CONT R
AGC CONT F
OPAmp ⊖
OPAmp ⊕
AGC DET
MODE (PAL/NT)
GND (D)
PG
LH1
5V (D)
H1
H2
VHH
VSUB
-9V
V2
V1
V3
V4
15V
Y OUT
S1 OUT
S2 OUT
CS CCD GC
CS OUT

14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30

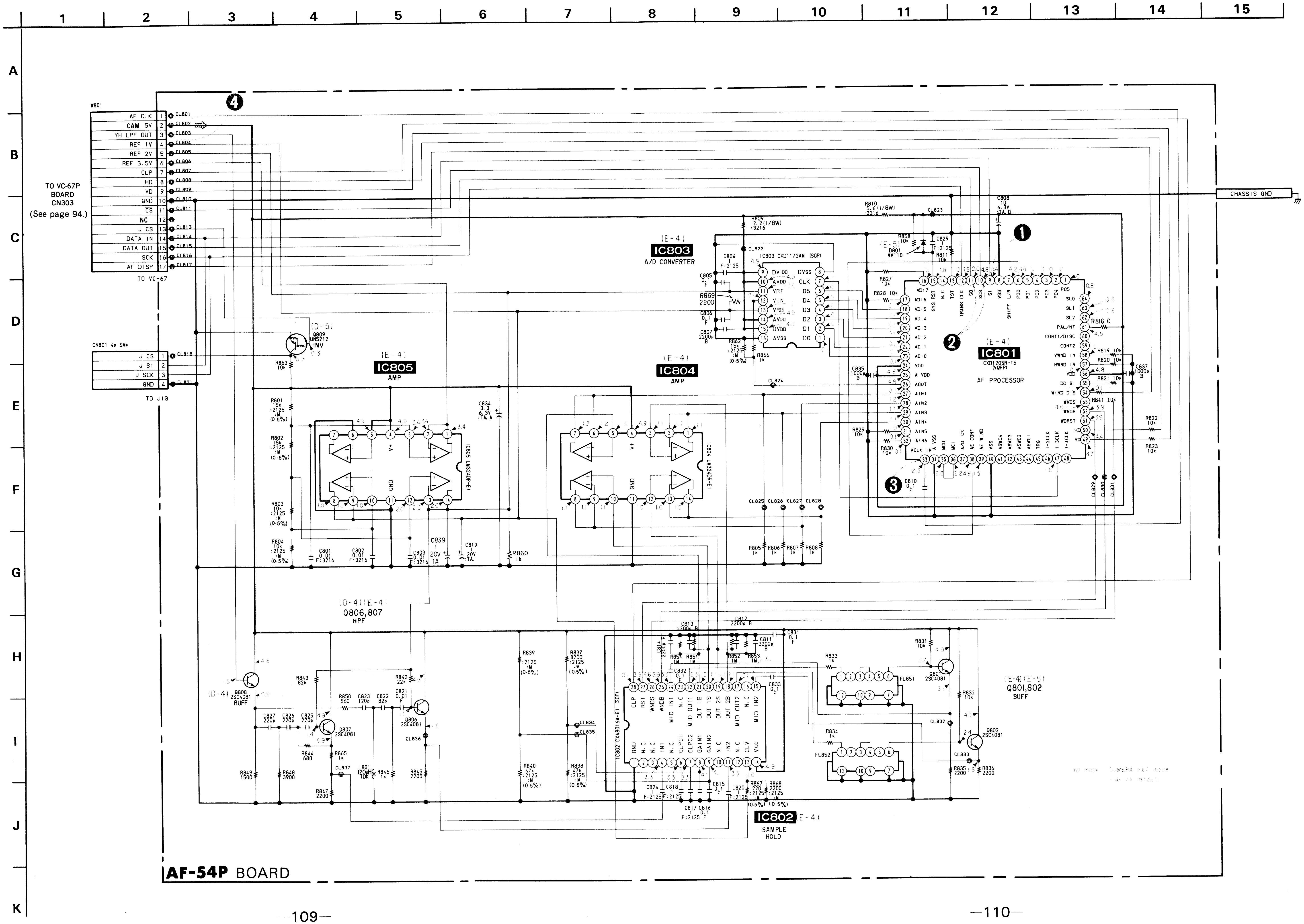
MX-12P BOARD is replaced as a block, so the PRINTED WIRING BOARD of it is omitted.


MX-12P BOARD
DT-77P BOARD
AGC DET
IRIS OUT
VG
WINDOW
XDL1
XDL2
ID
C-LEVEL
WB-DC
WB-B
WB-G
WB-R
CS OUT
R-Y OUT
B-Y OUT
VAP SLICE
CS IN
VAP GAIN
GND
VSS
DI
CLK
LD
DO
CLK (14MHz)
GND (D)
IC004
EVR
IC004 MB88341 (VSOP)
IC001
IC001 CXA1391R (VQFP)
PROCESS
IC002
C 1H DELAY
IC002 CXL1507N (VSOP)
IC003
Y 1H DELAY
IC003 CXL1504N (VSOP)
Q001 BUFF
Q001 2SA1576
Q002 BUFF
Q002 XN4401
Q003 BUFF
Q003 2SC4081
Q004 2SA1576 BUFF
FL001
B+
R068 22k
R067 22k
R065 15k
R066 10k
R063 22k
R064 22k
C061 0.01 F
R060 8.2k
R059 22k
R001 0
R002 4700
R003 4700
R004 4700
R009 33k
R010 22k
R012 22k
R013 1.8k
R014 22k
R015 15k
R016 33k
R017 39k
R018 33k
R019 4700
R023 15k
R027 1k
R028 1M
R030 1k
R031 2200
R032 0 (1/8W)
R033 0 (1/8W)
R034 0 (1/8W)
C001 0.1 F
C002 1
C003 0.1 F
C004 1
C005 1
C006 10 6.3V :TA
C007 1 F
C008 0.01 B
C009 1
C010 1
C011 1 20V :TA
C012 1 20V :TA
C013 0.1 F
C014 0.1 F
C015 0.1 F
C016 0.1 F
C017 0.01 B
C018 10 6.3V :TA
C019 0.1 F
C020 0.1 F
C021 0.1 F
C022 0.1 F:2125
C023 47p SL
C024 0.01 B
C025 10 6.3V :TA
C026 10 6.3V :TA
C027 1
C028 0.1 F
C031 1000p B
C032 1 F:2125
C033 1 F:2125
C034 1 F:2125
C035 1 F:2125
C036 0.01 B
C037 1
C038 1
C039 1
GND (D)
CLP3
5V (D)
B MTX
R MTX
S2
S1
Y2 GAIN
GND
5V
YH IN
YH OUT1
YH OUT2
TP
CLP4
CLP2
VAP OUT
YH GAIN
C GAM CONT
Y GAM CONT
GND (D)
GND (D)

CAMERA (2) CAMERA (2)

AF-54P (AUTO FOCUS) SCHEMATIC DIAGRAM

—Ref. No. AF-54P BOARD: 3000 series—



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A
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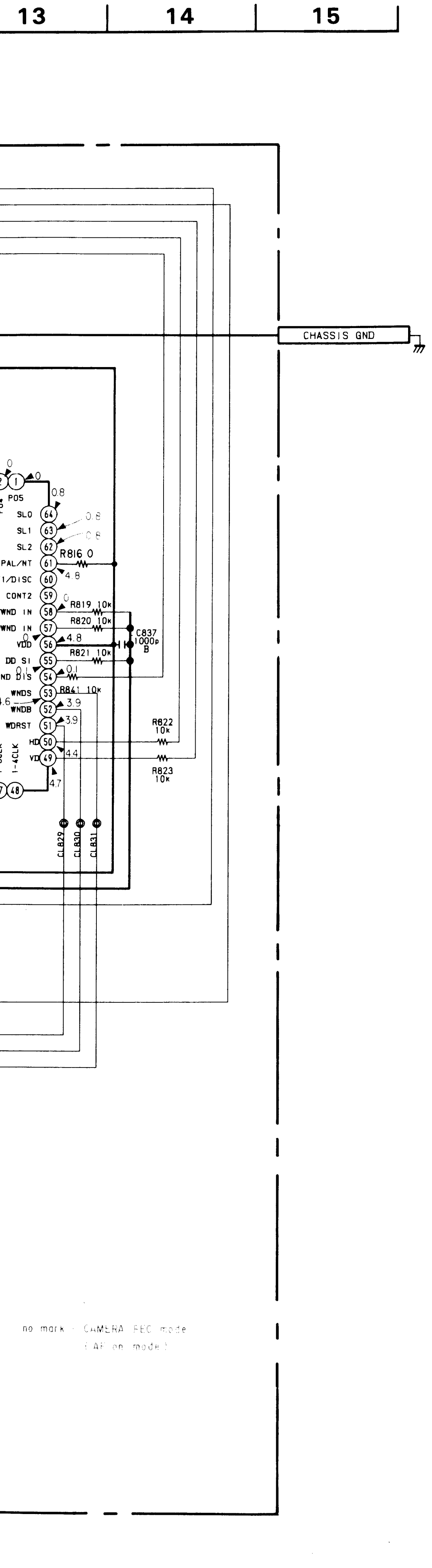
C
D
E
F
G
H
I
J
K
W801
AF CLK
CAM 5V
YH LPF OUT
REF 1V
REF 2V
REF 3.5V
CLP
HD
VD
GND
CS
NC
J CS
DATA IN
DATA OUT
SCK
AF DISP
TO VC-67P BOARD CN303 (See page 94.)
TO VC-67
CN801 4p SMk
J CS
J SI
J SCK
GND
TO JIG
❹
❶
❷
❸
CHASSIS GND
(E-4) IC803 A/D CONVERTER
IC803 CXD1172AM (SOP)
(E-4) IC801 CXD1205R-T5 (VQFP) AF PROCESSOR
(E-4) IC805 AMP
IC805 LM324DR-E1
(E-4) IC804 AMP
IC804 LM324DR-E1
(D-5) Q809 UN5212 INV
(D-4)(E-4) Q806,807 HPF
(D-4) Q808 2SC4081 BUFF
Q807 2SC4081
Q806 2SC4081
(E-4)(E-5) Q801,802 BUFF
Q801 2SC4081
Q802 2SC4081
(E-5) D801 MA110
IC802 CXA8014M-E1 (SOP)
IC802 (E-4) SAMPLE HOLD
FL851
FL852
R810 5.6 (1/8W) :3216
R809 2.2 (1/8W) :3216
C808 10 6.3V TA B
R816 0
R860 1k
CL801
CL802
CL803
CL804
CL805
CL806
CL807
CL808
CL809
CL810
CL811
CL813
CL814
CL815
CL816
CL817
CL818
CL821
CL822
CL823
CL824
CL825
CL826
CL827
CL828
CL829
CL830
CL831
CL832
CL833
CL834
CL835
CL836
CL837
AF-54P BOARD

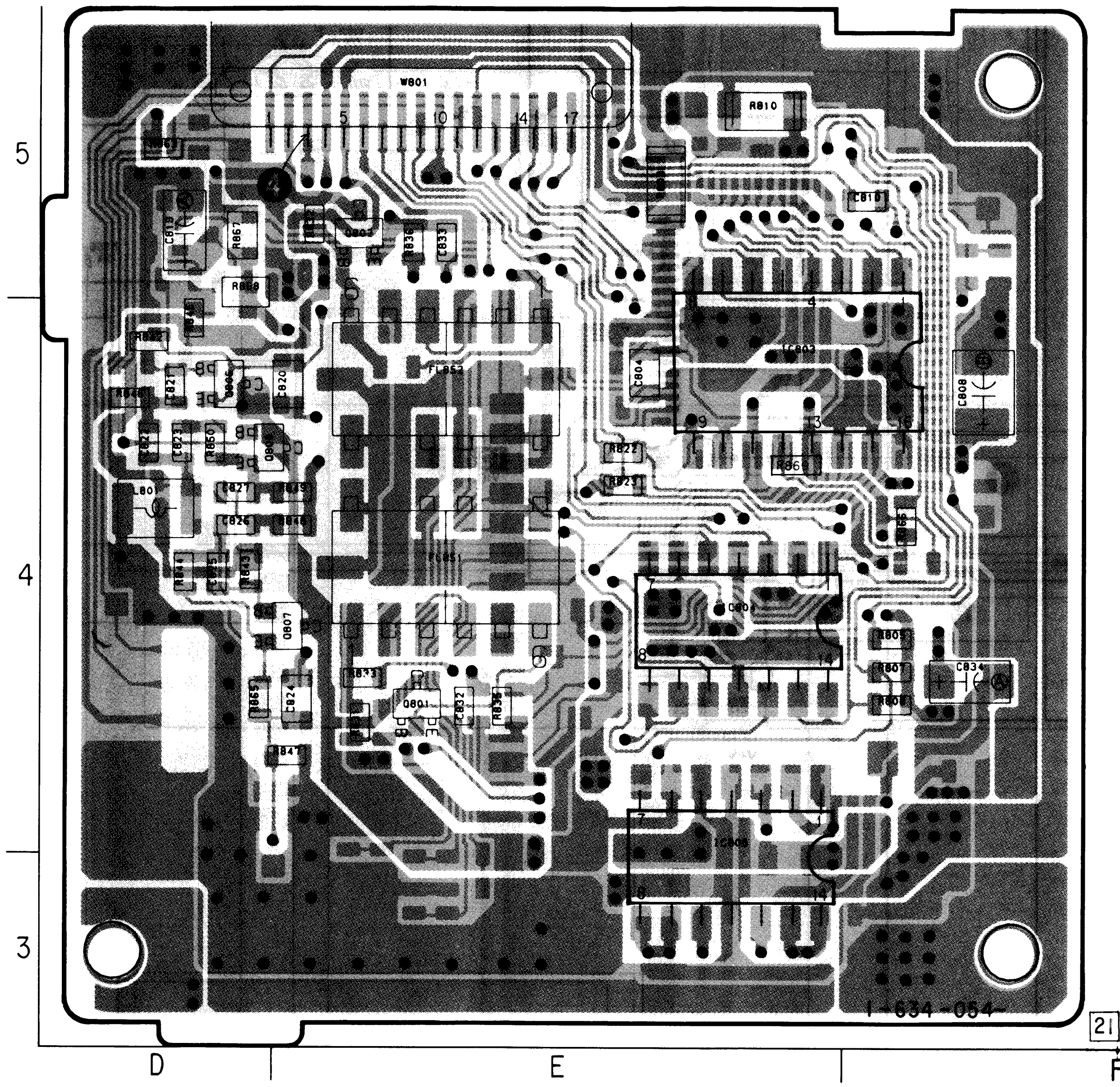

13
14
15
CHASSIS GND
P05
SL0
SL1
SL2
PAL/NT
1/DISC
CONT2
WND IN
WND IN
VDD
DD SI
ND DIS
WNDS
WNDB
WDRST
HD
VD
I-4CLK
R816 0
R819 10k
R820 10k
C837 1000p B
R821 10k
R841 10k
R822 10k
R823 10k
CL829
CL830
CL831
0.8
4.8
0.1
3.9
4.4
4.7

no mark : CAMERA REC mode
(AF on mode)

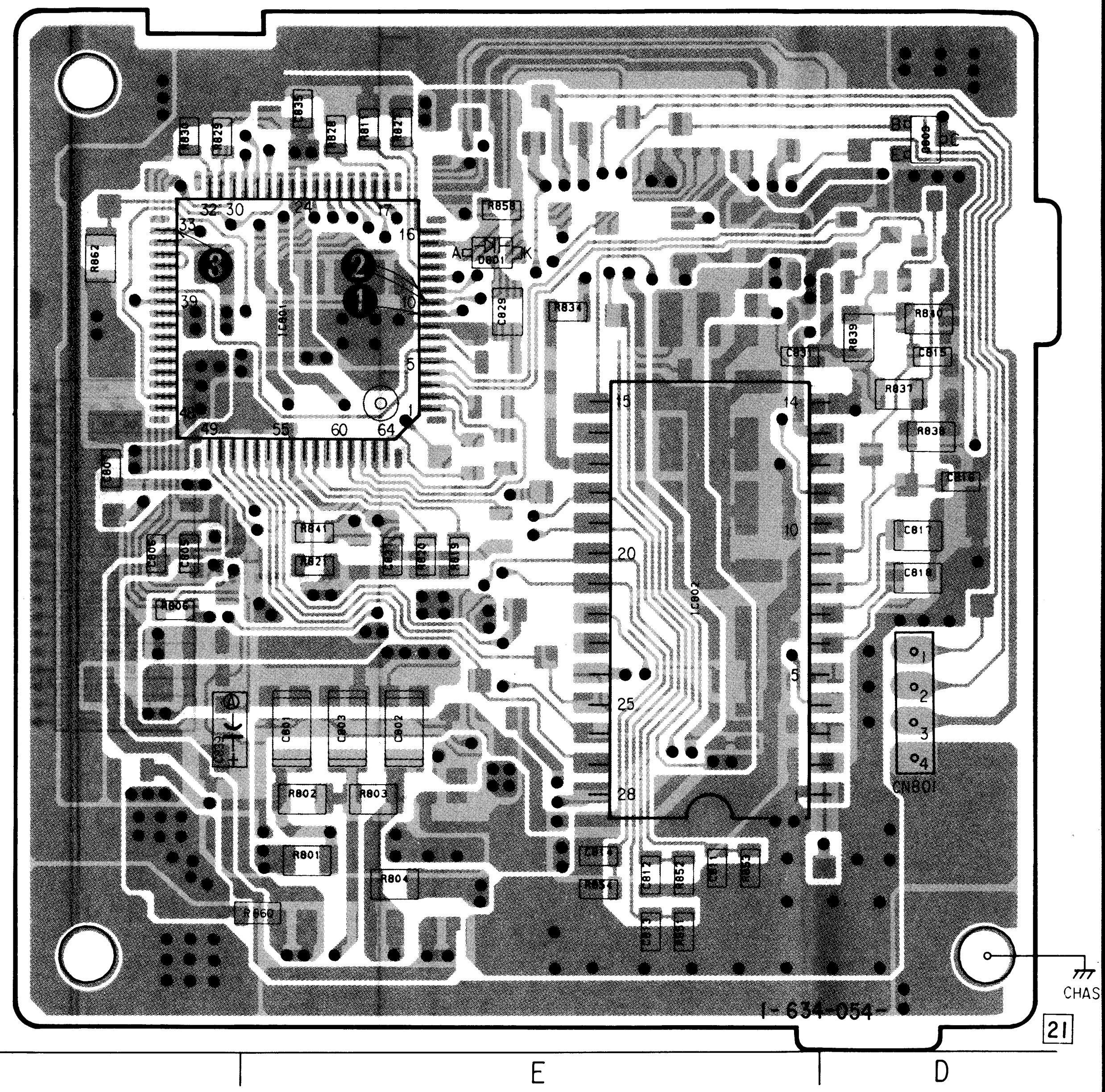
AF-54P (AUTO FOCUS) PRINTED WIRING BOARD

—Ref. No. AF-54P BOARD : 3000 series—

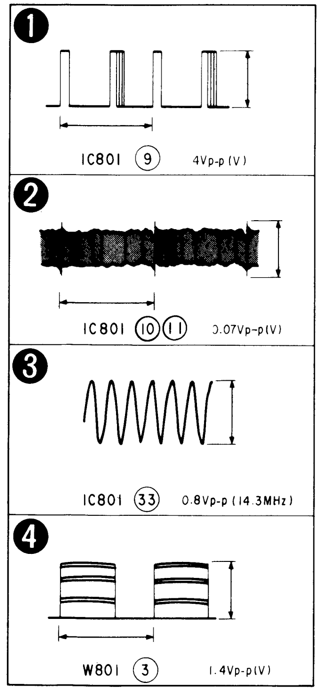
AF-54PBOARD(COMPONENT SIDE)


W801
R810
IC803
IC804
IC805
IC801
IC802
Q801
Q807
C834
C808
1-634-054-
21
5
4
3
D
E
F

AF-54PBOARD(CONDUCTOR SIDE)


IC801
IC802
D801
CN801
R858
R862
R834
C817
C818
1-634-054-
21
CHAS
E
D

AF-54PBOARD


❶
IC801 ⑨ 4Vp-p(V)
❷
IC801 ⑩⑪ 0.07Vp-p(V)
❸
IC801 ㉝ 0.8Vp-p(14.3MHz)
❹
W801 ③ 1.4Vp-p(V)

DIODE

D801	8-719-404-46	DIODE MA110

IC

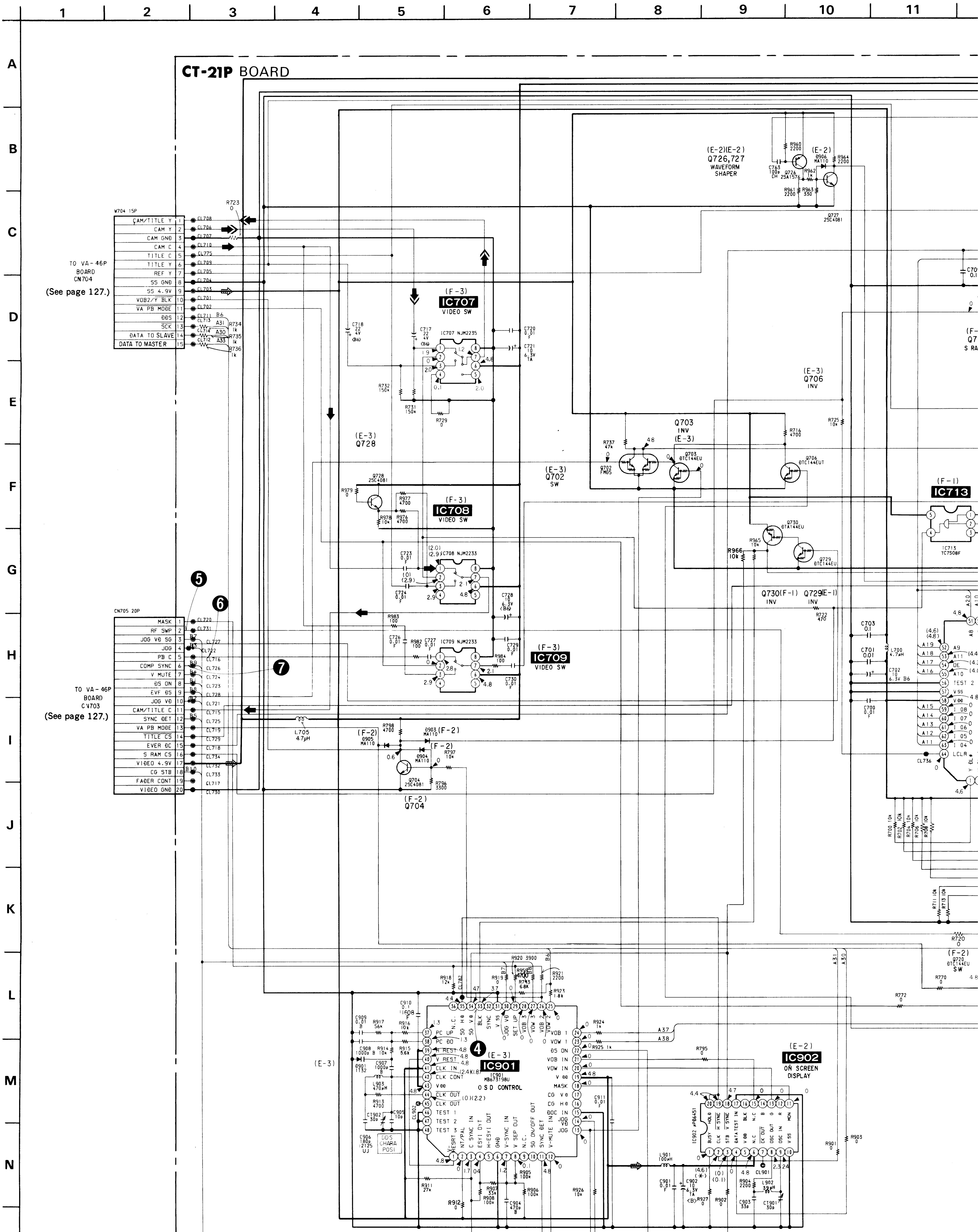
IC801	8-752-334-83	IC CXD1205R
IC802	8-759-148-87	IC CXA8016M
IC803	8-752-335-65	IC CXD1172AM
IC804	8-759-998-96	IC LM324D
IC805	8-759-998-96	IC LM324D

TRANSISTOR

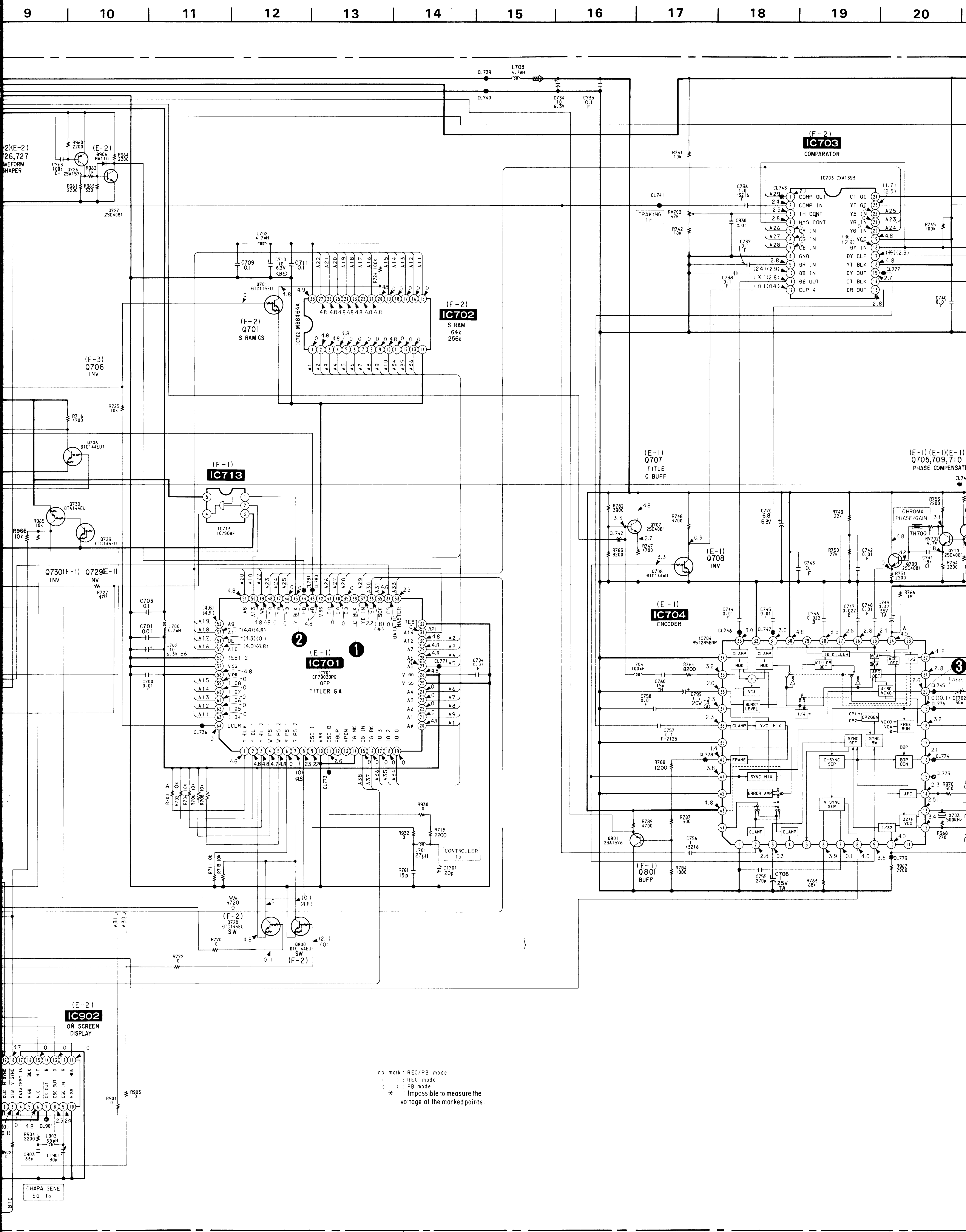
Q801	8-729-905-35	TRANSISTOR 2SC4081-R
Q802	8-729-905-35	TRANSISTOR 2SC4081-R
Q806	8-729-905-35	TRANSISTOR 2SC4081-R
Q807	8-729-905-35	TRANSISTOR 2SC4081-R
Q808	8-729-905-35	TRANSISTOR 2SC4081-R
Q809	8-729-402-45	TRANSISTOR UN5212

CT-21P (DIGITAL TITLE) SCHEMATIC DIAGRAM

—Ref. No. CT-21P BOARD : 1000 series—

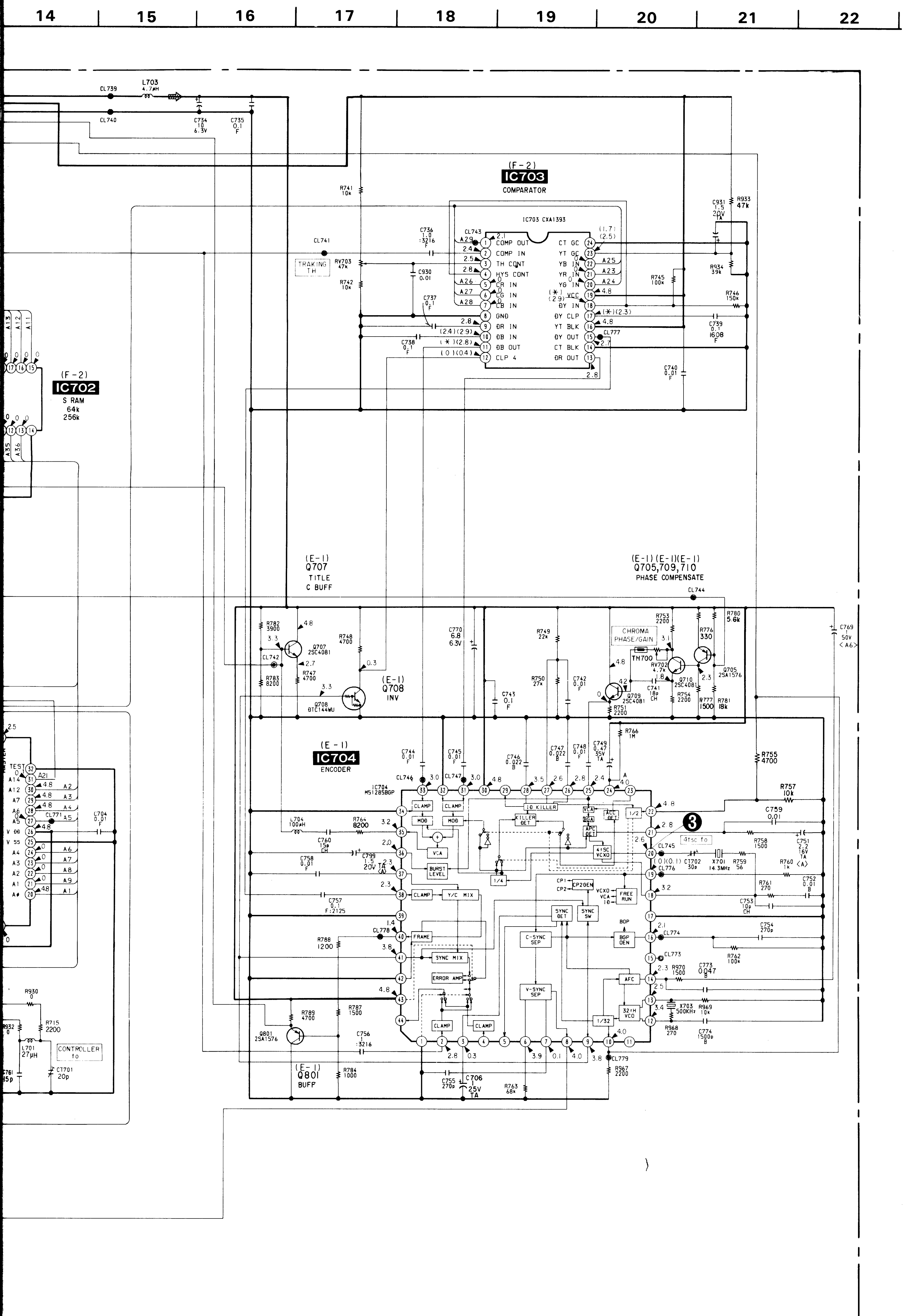

1
2
3
4
5
6
7
8
9
10
11
A
B
C
D
E
F
G
H
I
J
K
L
M
N
O
CT-21P BOARD
W704 15P
CAM/TITLE Y
CAM Y
CAM GND
CAM C
TITLE C
TITLE Y
REF Y
SS GND
SS 4.9V
VOBZ/Y BLK
VA PB MODE
DDS
SCK
DATA TO SLAVE
DATA TO MASTER
TO VA-46P BOARD CN704
(See page 127.)
CN705 20P
MASK
RF SWP
JOG VD SG
JOG
PB C
COMP SYNC
V MUTE
DS ON
EVF DS
JOG VD
CAM/TITLE C
SYNC DET
VA PB MODE
TITLE CS
EVER DC
S RAM CS
VIDEO 4.9V
CG STB
FADER CONT
VIDEO GND
TO VA-46P BOARD CN703
(See page 127.)
(F-3) IC707 VIDEO SW
IC707 NJM2235
(E-3) Q728
Q728 2SC4081
(F-3) IC708 VIDEO SW
IC708 NJM2233
(F-3) IC709 VIDEO SW
IC709 NJM2233
L705 4.7µH
(F-2) Q704
Q704 2SC4081
(E-2)(E-2) Q726,727 WAVEFORM SHAPER
Q726 2SA1576
Q727 2SC4081
(E-3) Q702 SW
Q702 FM05
Q703 INV (E-3)
Q703 DTC144EU
(E-3) Q706 INV
Q706 DTC144EUT
Q730 DTA144EU
Q729 DTC144EU
Q730(F-1) INV
Q729(E-1) INV
(F-1) IC713
IC713 TC7S08F
(F-2) Q720 SW
Q720 DTC144EU
(E-3) IC901
IC901 MB673198U
OSD CONTROL
DDS CHARA POSI
(E-2) IC902
ON SCREEN DISPLAY
IC902 µPD6451
CHARA GENE SG fo
❺
❻
❼
❹

TITLE TITLE


9
10
11
12
13
14
15
16
17
18
19
20
(E-2)(E-2)
Q726,727
WAVEFORM SHAPER
(F-2)
IC703
COMPARATOR
IC703 CXA1393
TRAKING TH
(F-2)
IC702
S RAM
64k
256k
IC702 MB8464A
(F-2)
Q701
S RAM CS
(E-3)
Q706
INV
(F-1)
IC713
IC713 TC7S08F
Q730(F-1) Q729(E-1)
INV INV
(E-1)
IC701
IC701 CF79028PG
QFP
TITLER GA
CONTROLLER fo
(F-2)
Q720
DTC144EU
SW
Q800
DTC144EU
SW
(F-2)
(E-1)
Q707
TITLE
C BUFF
(E-1)
Q708
INV
(E-1)(E-1)(E-1)
Q705,709,710
PHASE COMPENSAT
CHROMA PHASE/GAIN
(E-1)
IC704
ENCODER
IC704 M51285BGP
(E-1)
Q801
BUFF
(E-2)
IC902
ON SCREEN DISPLAY
CHARA GENE SG fo

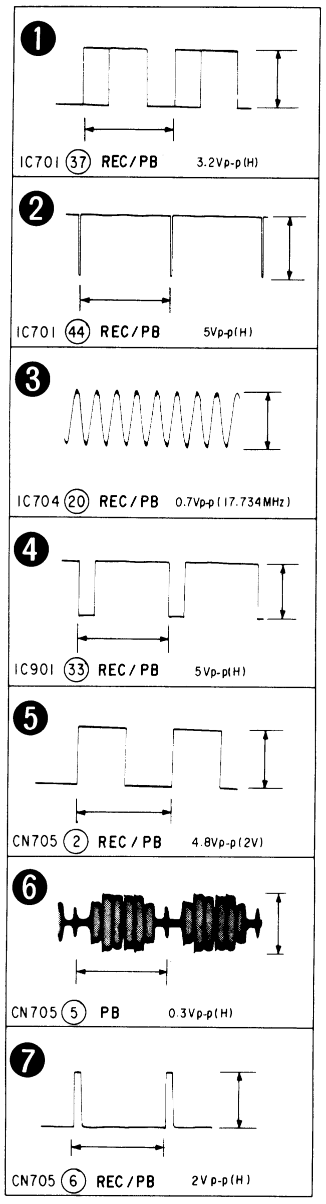
no mark : REC/PB mode
( ) : REC mode
( ) : PB mode
* : Impossible to measure the voltage at the marked points.

TITLE TITLE


14
15
16
17
18
19
20
21
22
L703 4.7μH
CL739
CL740
C734 10 6.3V
C735 0.1 F
(F-2)
IC703
COMPARATOR
IC703 CXA1393
R741 10k
CL741
TRAKING TH
RV703 47k
R742 10k
C736 1.0 :3216 F
C930 0.01
C737 0.1 F
C738 0.1 F
CL743
A29
1 COMP OUT
2 COMP IN
3 TH CONT
4 HYS CONT
5 CR IN
6 CG IN
7 CB IN
8 GND
9 ĐR IN
10 ĐB IN
11 ĐB OUT
12 CLP 4
24 CT GC
23 YT GC
22 YB IN
21 YR IN
20 YG IN
19 VCC
18 ĐY IN
17 ĐY CLP
16 YT BLK
15 ĐY OUT
14 CT BLK
13 ĐR OUT
A26
A27
A28
A25
A23
A24
(1.7)
(2.5)
(2.4)(2.9)
(✱)(2.8)
(0)(0.4)
(✱)(2.9)
(✱)(2.3)
CL777
R745 100k
C931 1.5 20V TA
R933 47k
R934 39k
R746 150k
C739 0.1 1608 F
C740 0.01 F
(F-2)
IC702
S RAM
64k
256k
(E-1)
Q707
TITLE
C BUFF
R782 3900
CL742
Q707 2SC4081
R783 8200
R747 4700
R748 4700
(E-1)
Q708
INV
Q708 DTC144WU
C770 6.8 6.3V
R749 22k
C743 0.1 F
R750 27k
C742 0.01 F
(E-1)(E-1)(E-1)
Q705,709,710
PHASE COMPENSATE
CL744
R753 2200
CHROMA PHASE/GAIN
TH700
RV702 4.7k
C741 18p CH
Q709 2SC4081
Q710 2SC4081
R751 2200
R754 2200
R776 330
R777 1500
R780 5.6k
R781 18k
Q705 2SA1576
C769 1 50V ‹A6›
R766 1M
(E-1)
IC704
ENCODER
IC704 M51285BGP
C744 0.01 F
C745 0.01 F
C746 0.022 B
C747 0.022 B
C748 0.01 F
C749 0.47 35V TA
CL746
CL747
CLAMP
MOD
VCA
BURST LEVEL
Y/C MIX
1/4
ID KILLER
KILLER DET
BGA
APC DET
ACC DET
1/2
4fSC VCXO
CP1
CP2
CP2GEN
VCXO
VCA
ID
FREE RUN
SYNC DET
SYNC SW
C-SYNC SEP
V-SYNC SEP
BGP
BGP DEN
AFC
32fH VCO
1/32
FRAME
SYNC MIX
ERROR AMP
L704 100μH
R764 8200
C760 15p CH
C758 0.01 F
C799 1.5 20V TA ‹A›
C757 0.1 F:2125
CL778
R788 1200
CL745
4fsc fo
C1702 30p
X701 14.3MHz
R759 56
R758 1500
R760 1k ‹A›
C751 2.2 16V TA
C752 0.01 B
R761 270
C753 10p CH
C754 270p
CL774
CL773
R762 100k
R970 1500
C773 0.047 B
X703 500KHz
R969 10k
R968 270
C774 1500p B
CL779
R967 2200
R755 4700
R757 10k
C759 0.01
C755 270p
C706 1 25V TA
R763 68k
R789 4700
R787 1500
Q801 2SA1576
C756 1 :3216
(E-1)
Q801
BUFF
R784 1000
R930 0
R715 2200
L701 27μH
CONTROLLER
C1701 20p
TEST
L704 0.01

: REC/PB mode
: REC mode
: PB mode
: Impossible to measure the voltage at the marked points.

CT-21P BOARD

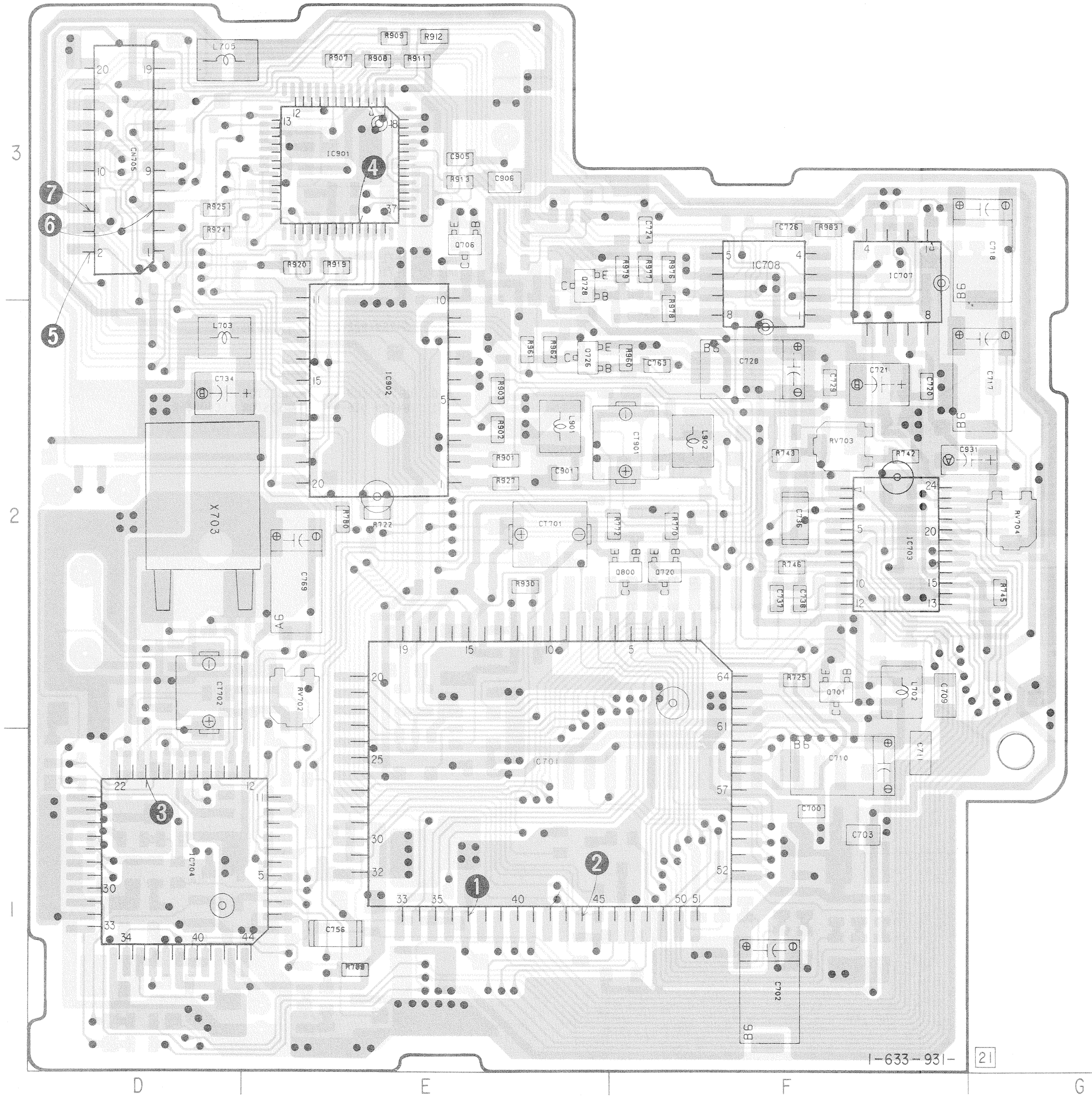


• Signal path

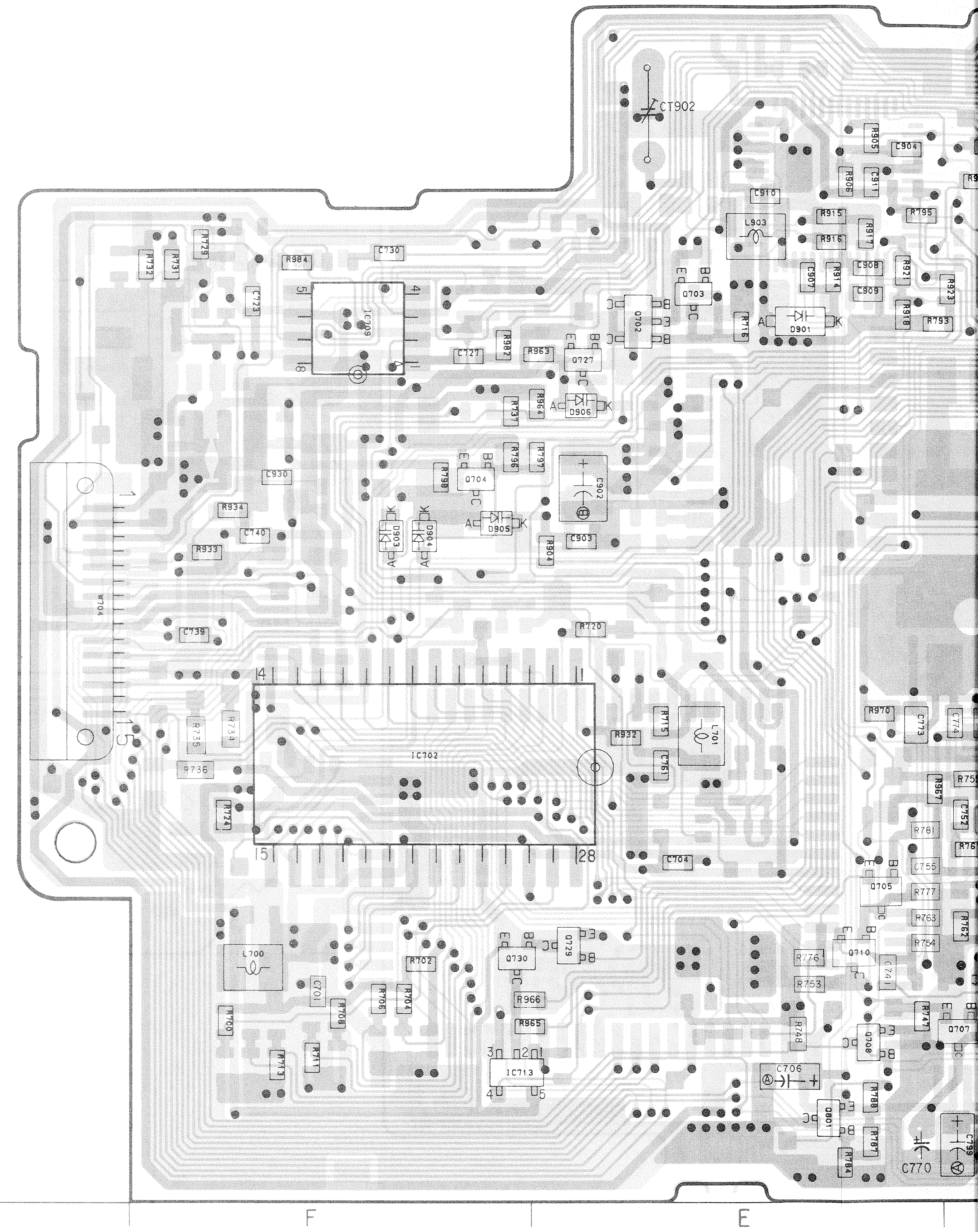
	VIDEO Signal		
	CHROMA	Y	Y/CHROMA
REC	➡	➡»	➡⋙
PB	⇨	⇨»	⇨⋙

TITLE TITLE

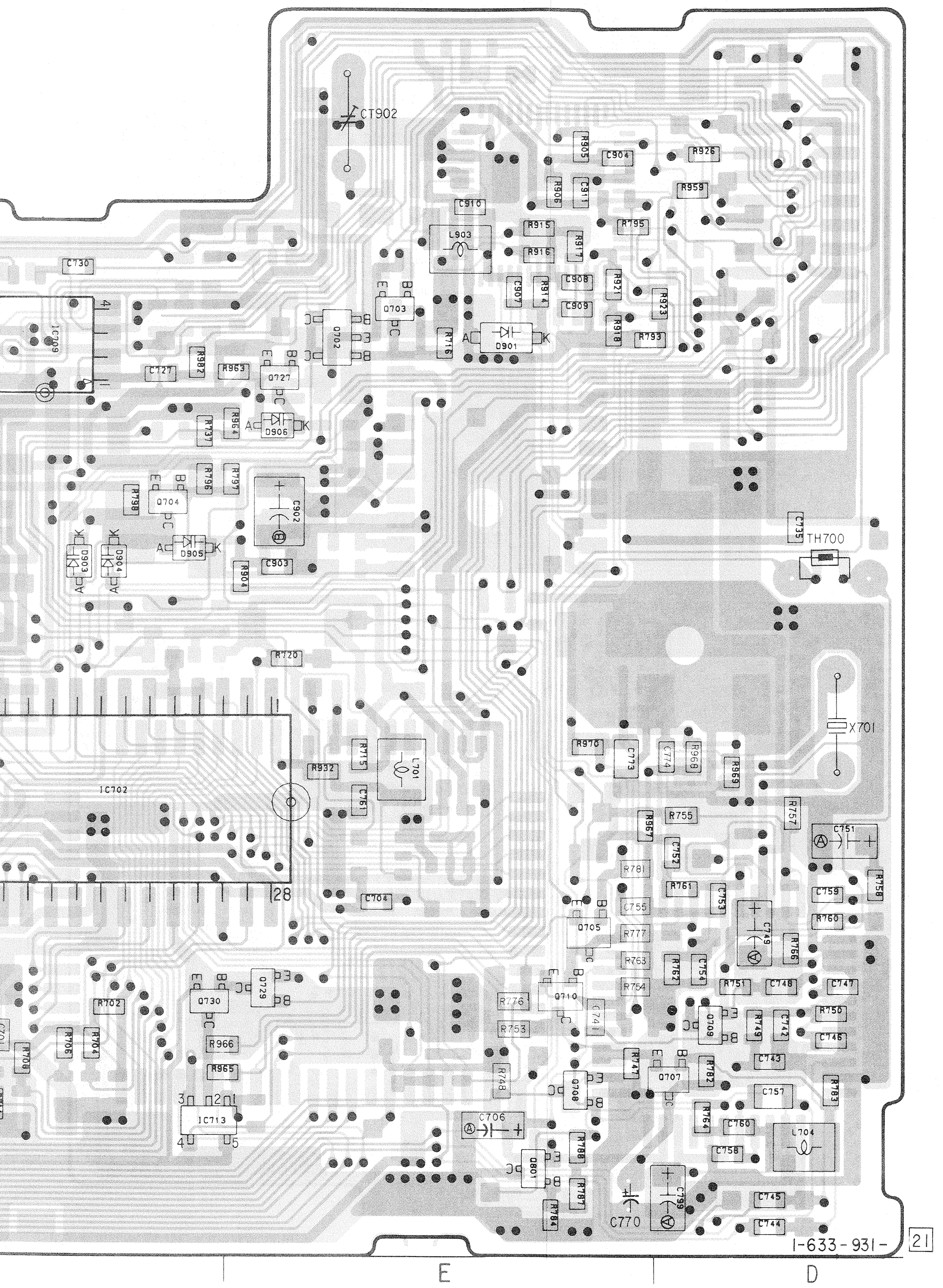
CT-21P BOARD (COMPONENT SIDE)


3
2
1
CN705
IC901
IC902
IC708
IC707
IC703
IC701
IC704
X703
L705
L703
L901
L902
L702
CT701
CT702
C901
RV702
RV703
RV704
Q706
Q728
Q726
Q800
Q720
Q701
C702
C756
C769
C734
C728
C721
C710
C703
C700
1
2
3
4
5
6
7
1-633-931-
21
D
E
F
G

CT-21PBOARD (CONDUCTOR SIDE)


CT902
IC709
IC702
IC713
W704
L903
L701
L700
Q703
Q702
Q727
Q704
Q730
Q729
Q705
Q710
Q708
Q801
Q707
D901
D906
D905
D903
D904
C902
C706
C770
F
E

CTOR SIDE)


CT902
C904
R926
R905
R906
C911
R959
C910
L903
R915
R916
R917
R795
C907
R914
C908
C909
R921
R923
R918
R793
D901
Q703
Q702
R116
C730
IC709
C727
R987
R963
Q727
D906
R964
R737
Q704
R796
R797
C902
R798
D905
D903
D904
C903
R904
R720
IC702
28
R932
R715
L701
C761
C704
R970
C773
C774
R968
R969
TH700
C735
X701
R967
R755
R757
C751
C752
R781
R761
C753
R758
C759
R760
C755
Q705
R777
C749
R765
R763
R762
C754
R751
C748
C747
R754
R776
Q710
C741
R753
Q708
R749
C742
R750
C746
R702
Q730
Q729
R966
R965
IC713
R706
R704
R748
Q709
R747
Q707
R782
C743
C757
R783
C706
C760
L704
C758
Q801
R788
R787
R784
C799
C770
C745
C744
1-633-931-
21
E
D

DIODE

D901	8-719-949-46	DIODE 1T32
D903	8-719-404-46	DIODE MA110
D904	8-719-404-46	DIODE MA110
D905	8-719-404-46	DIODE MA110
D906	8-719-404-46	DIODE MA110

IC

IC701	8-759-998-30	IC CF79028PG
IC702	8-759-504-54	IC MB8464A-15LLPF-EL
IC703	8-752-039-49	IC CXA1393AN
IC704	8-759-634-47	IC M51285BGP
IC707	8-759-710-29	IC NJM2235M
IC708	8-759-710-86	IC NJM2233BM
IC709	8-759-710-86	IC NJM2233BM
IC713	8-759-234-20	IC TC7S08F
IC901	8-759-970-80	IC MB673198U
IC902	8-759-148-62	IC UPD6451GT-630-T1

TRANSISTOR

Q701	8-729-925-91	TRANSISTOR DTC115EU
Q702	8-729-420-16	TRANSISTOR XN1214
Q703	8-729-905-18	TRANSISTOR DTC144EU
Q704	8-729-905-35	TRANSISTOR 2SC4081-R
Q705	8-729-905-23	TRANSISTOR 2SA1576-R
Q706	8-729-905-18	TRANSISTOR DTC144EU
Q707	8-729-905-35	TRANSISTOR 2SC4081-R
Q708	8-729-905-15	TRANSISTOR DTC144WU
Q709	8-729-905-35	TRANSISTOR 2SC4081-R
Q710	8-729-905-35	TRANSISTOR 2SC4081-R
Q720	8-729-905-18	TRANSISTOR DTC144EU
Q726	8-729-905-23	TRANSISTOR 2SA1576-R
Q727	8-729-905-35	TRANSISTOR 2SC4081-R
Q728	8-729-905-35	TRANSISTOR 2SC4081-R
Q729	8-729-905-18	TRANSISTOR DTC144EU
Q730	8-729-905-12	TRANSISTOR DTA144EU
Q800	8-729-905-18	TRANSISTOR DTC144EU
Q801	8-729-905-23	TRANSISTOR 2SA1576

MC-44P (MIC), SW-124P (SWITCH, JACK), VA-46P (VIDEO/AUDIO) PRINTED WIRING BOARDS

—Ref. No. MC-44P BOARD : 2000 series, SW-124P, VA-46P BOARDS : 3000 series—

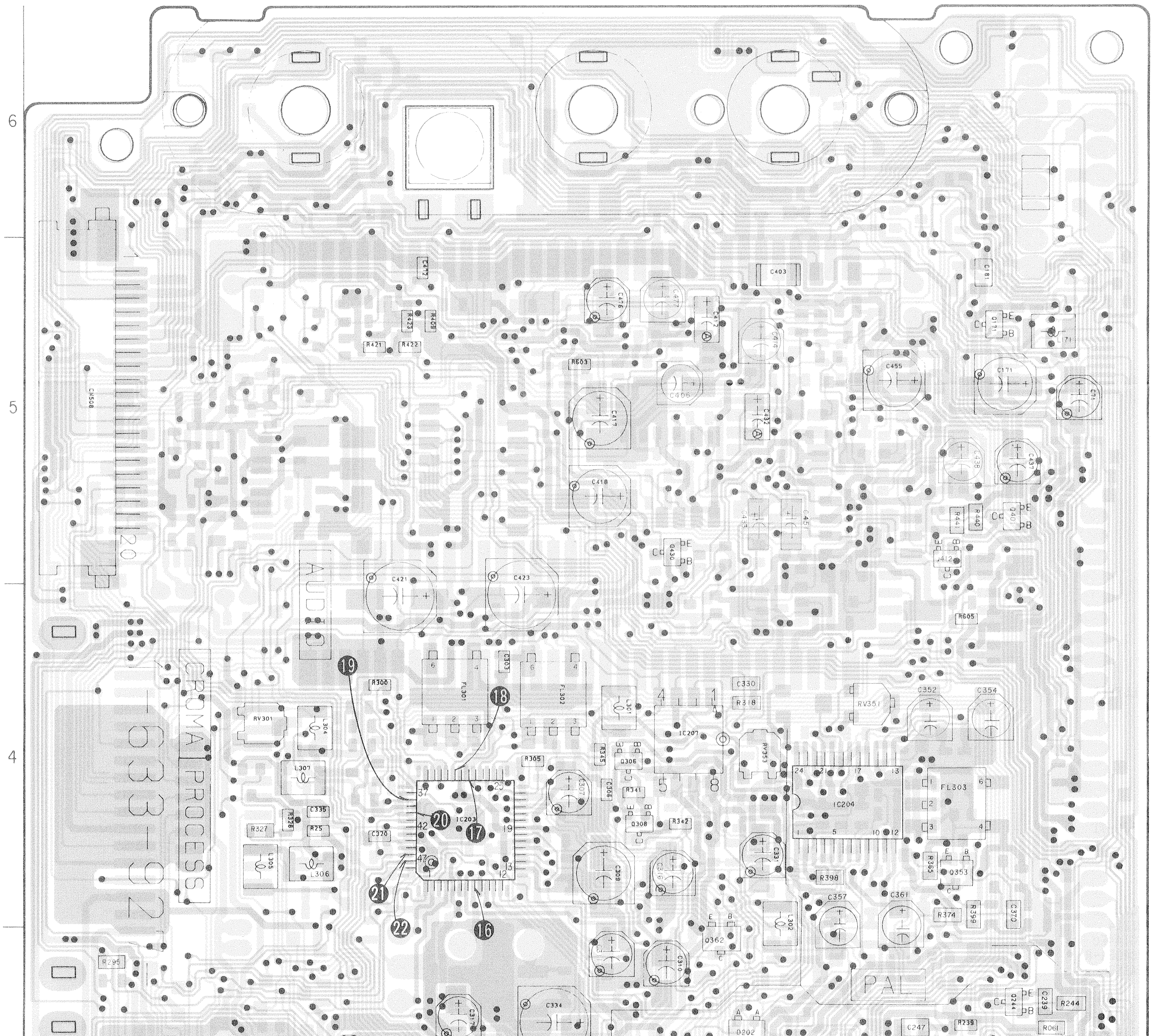
DIODE

D101	8-719-800-76	DIODE	1SS123
D202	8-719-941-86	DIODE	DAN202U
D203	8-719-941-86	DIODE	DAN202U
D204	8-719-404-46	DIODE	MA110
D205	8-719-941-86	DIODE	DAN202U
D207	8-719-941-86	DIODE	DAN202U
D208	8-719-941-86	DIODE	DAN202U
D209	8-719-941-86	DIODE	DAN202U
D210	8-719-404-46	DIODE	MA110
D211	8-719-941-86	DIODE	DAN202U
D212	8-719-941-86	DIODE	DAN202U
D215	8-719-404-46	DIODE	MA110
D216	8-719-404-46	DIODE	MA110
D351	8-719-404-46	DIODE	MA110
D406	8-719-404-46	DIODE	MA110
D408	8-719-941-86	DIODE	DAN202U

IC

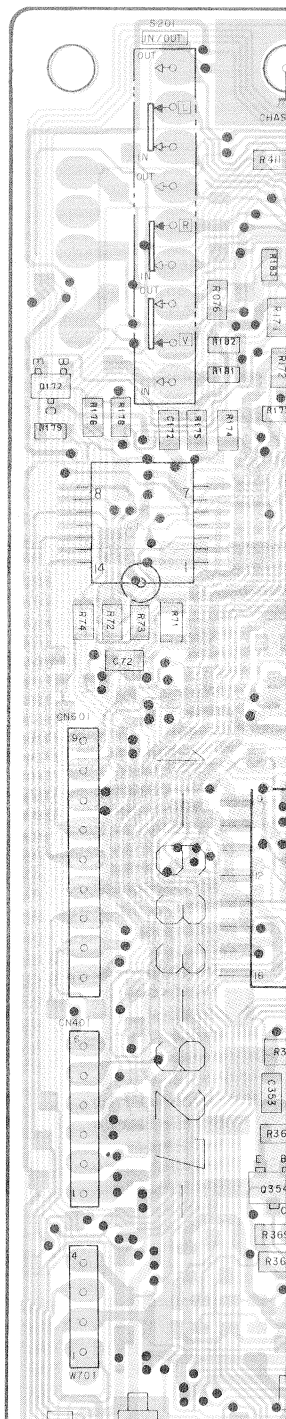
IC001	8-759-999-02	IC	TL1596CDS
IC101	8-759-012-00	IC	MC10H116M
IC201	8-752-036-19	IC	CXA1207R
IC202	8-752-335-88	IC	CXL1506M
IC203	8-752-036-20	IC	CXA1208R
IC204	8-759-605-61	IC	CXA1203N
IC205	8-759-710-29	IC	NJM2235M
IC206	8-759-322-02	IC	HA118070F
IC207	8-759-710-07	IC	NJM2234M
IC400	8-741-150-51	IC	SBX1505-2

VA-46PBOARD (COMPONENT SIDE)



6
5
4
3
2
1
A
B
C
D
AUDIO
CHROMA PROCESS
1-633-927-
PB RF
Y PROCESS
REC RF
PAL
IC201
IC202
IC203
IC204
IC205
IC207
FL201
FL202
FL203
FL204
FL205
FL301
FL302
FL303
CN501
21

VA-46PBOARD (CO



S201
IN/OUT
CHASSIS
CN601

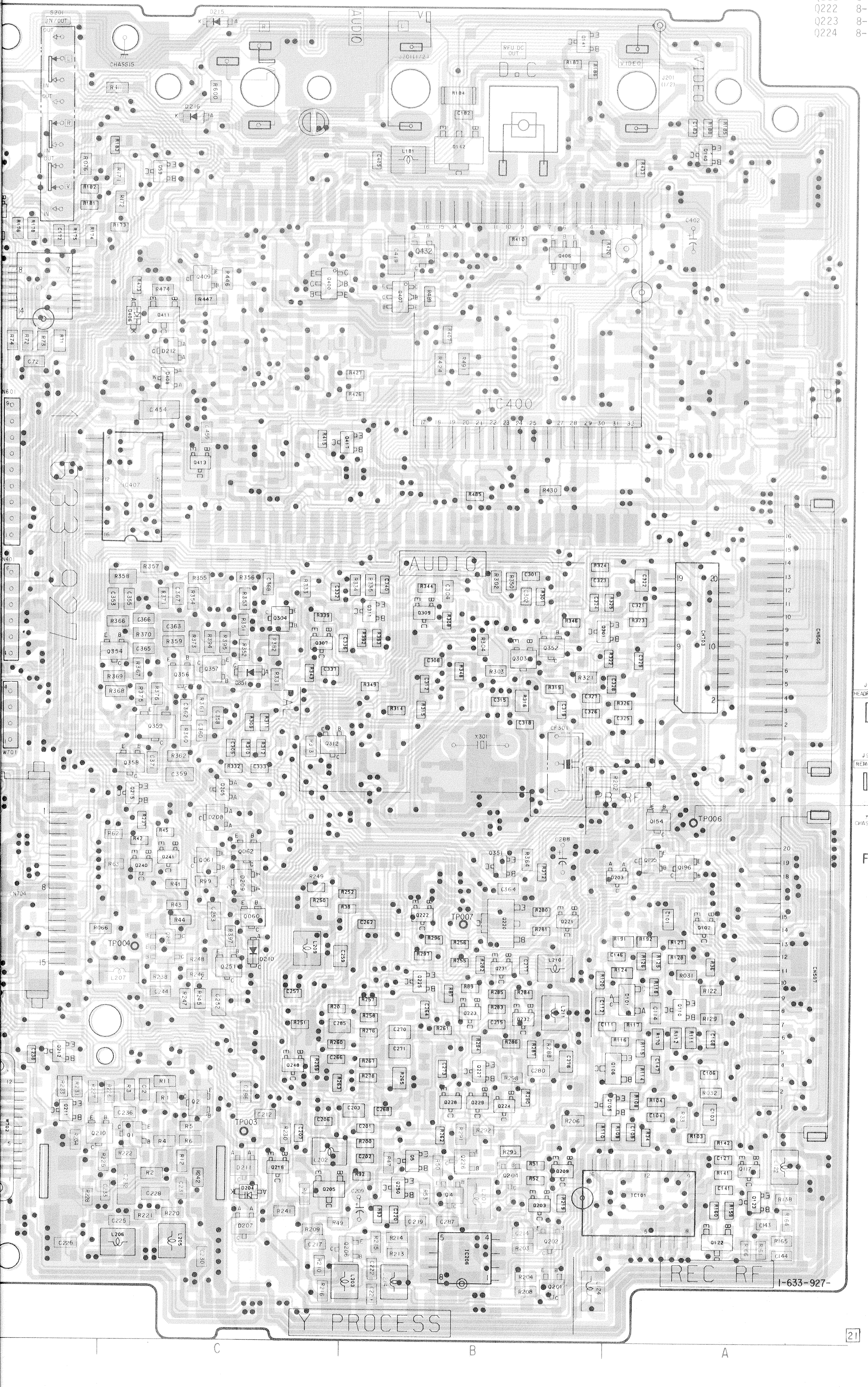
IC

-999-02	IC	TL1596CDSB
-012-00	IC	MC10H116M
-036-19	IC	CXA1207R
-335-88	IC	CXL1506M
-036-20	IC	CXA1208R
-605-61	IC	CXA1203N
-710-29	IC	NJM2235M
-322-02	IC	HA118070FPTR
-710-07	IC	NJM2234M
-150-51	IC	SBX1505-21

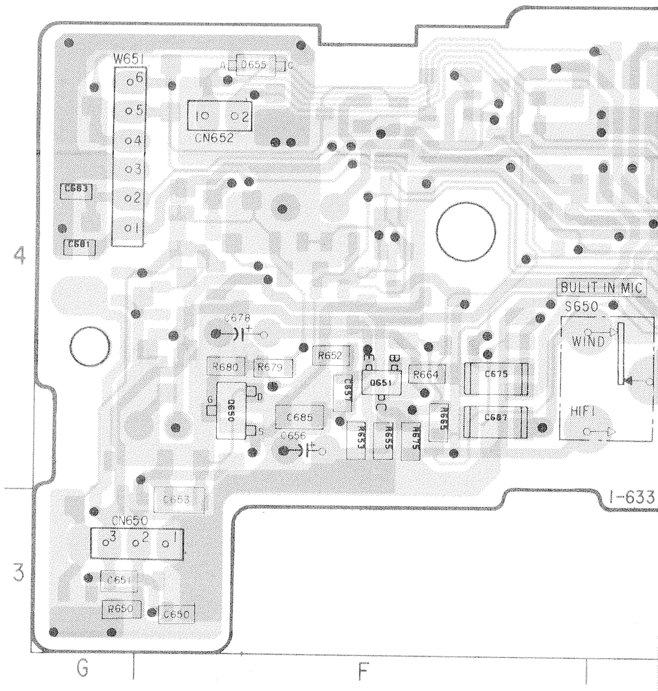
TRANSISTOR

Q001	8-729-905-23	TRANSISTOR 2SA1576-R
Q002	8-729-905-35	TRANSISTOR 2SC4081-R
Q004	8-729-905-35	TRANSISTOR 2SC4081-R
Q005	8-729-905-35	TRANSISTOR 2SC4081-R
Q059	8-729-905-18	TRANSISTOR DTC144E
Q060	8-729-905-18	TRANSISTOR DTC144E
Q061	8-729-905-18	TRANSISTOR DTC144E
Q062	8-729-905-18	TRANSISTOR DTC144E
Q063	8-729-905-12	TRANSISTOR DTA144E
Q101	8-729-905-23	TRANSISTOR 2SA1576-R
Q102	8-729-905-18	TRANSISTOR DTC144EU
Q105	8-729-905-35	TRANSISTOR 2SC4081-R
Q106	8-729-102-07	TRANSISTOR 2SC2223-F13
Q107	8-729-905-12	TRANSISTOR DTA144EU
Q109	8-729-905-35	TRANSISTOR 2SC4081-R
Q110	8-729-905-18	TRANSISTOR DTC144EU
Q115	8-729-905-35	TRANSISTOR 2SC4081-R
Q117	8-729-905-35	TRANSISTOR 2SC4081-R
Q118	8-729-905-23	TRANSISTOR 2SA1576-R
Q119	8-729-905-35	TRANSISTOR 2SC4081-R
Q121	8-729-141-48	TRANSISTOR 2SB624-BV345
Q122	8-729-102-07	TRANSISTOR 2SC2223-F13
Q123	8-729-905-35	TRANSISTOR 2SC4081-R
Q140	8-729-905-12	TRANSISTOR DTA144EU
Q141	8-729-905-35	TRANSISTOR 2SC4081-R
Q142	8-729-101-07	TRANSISTOR 2SB798-DL
Q154	8-729-905-35	TRANSISTOR 2SC4081-R
Q171	8-729-905-35	TRANSISTOR 2SC4081-R
Q172	8-729-905-35	TRANSISTOR 2SC4081-R
Q191	8-729-905-35	TRANSISTOR 2SC4081-R
Q192	8-729-905-18	TRANSISTOR DTC144EU
Q195	8-729-905-12	TRANSISTOR DTA144EU
Q196	8-729-905-18	TRANSISTOR DTC144EU
Q201	8-729-905-35	TRANSISTOR 2SC4081-R
Q202	8-729-905-12	TRANSISTOR DTA144EU
Q203	8-729-905-23	TRANSISTOR 2SA1576-R
Q204	8-729-905-35	TRANSISTOR 2SC4081-R
Q205	8-729-202-38	TRANSISTOR 2SC3326N
Q206	8-729-905-35	TRANSISTOR 2SC4081-R
Q209	8-729-905-18	TRANSISTOR DTC144EU
Q210	8-729-905-23	TRANSISTOR 2SA1576-R
Q211	8-729-905-35	TRANSISTOR 2SC4081-R
Q212	8-729-905-35	TRANSISTOR 2SC4081-R
Q213	8-729-904-07	TRANSISTOR FMG2
Q215	8-729-905-23	TRANSISTOR 2SA1576-R
Q216	8-729-905-18	TRANSISTOR DTC144EU
Q220	8-729-101-07	TRANSISTOR 2SB798-DL
Q221	8-729-905-18	TRANSISTOR DTC144EU
Q222	8-729-905-12	TRANSISTOR DTA144EU
Q223	8-729-905-35	TRANSISTOR 2SC4081-R
Q224	8-729-905-35	TRANSISTOR 2SC4081-R
Q225	8-729-905-12	
Q226	8-729-905-35	
Q227	8-729-905-35	
Q228	8-729-905-23	
Q229	8-729-905-35	
Q231	8-729-905-35	
Q232	8-729-905-35	
Q238	8-729-905-23	
Q240	8-729-905-35	
Q241	8-729-905-23	
Q244	8-729-905-18	
Q245	8-729-905-XX	
Q246	8-729-905-XX	
Q247	8-729-905-XX	
Q248	8-729-905-18	
Q250	8-729-905-35	
Q251	8-729-905-18	
Q301	8-729-905-23	
Q303	8-729-905-35	
Q304	8-729-905-35	
Q306	8-729-905-35	
Q307	8-729-905-18	
Q308	8-729-905-12	

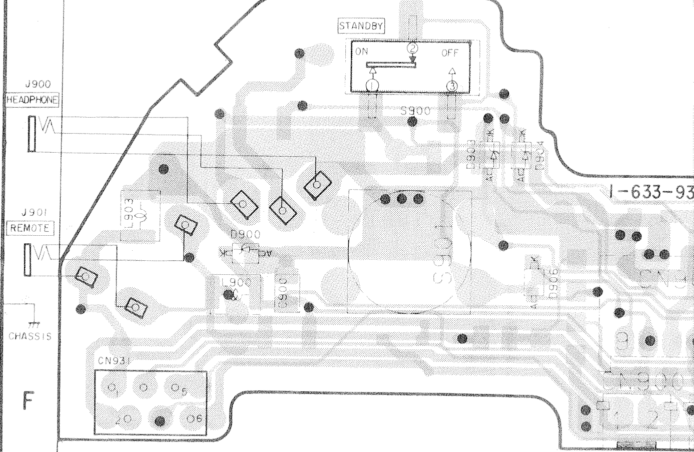
-46P BOARD (CONDUCTOR SIDE)


S201
IN/OUT
CHASSIS
AUDIO
VIDEO
RFU DC OUT
IC400
AUDIO
Y PROCESS
REC RF
TP003
TP004
TP006
TP007
IC101
IC206
1-633-927-
C
B
A
21

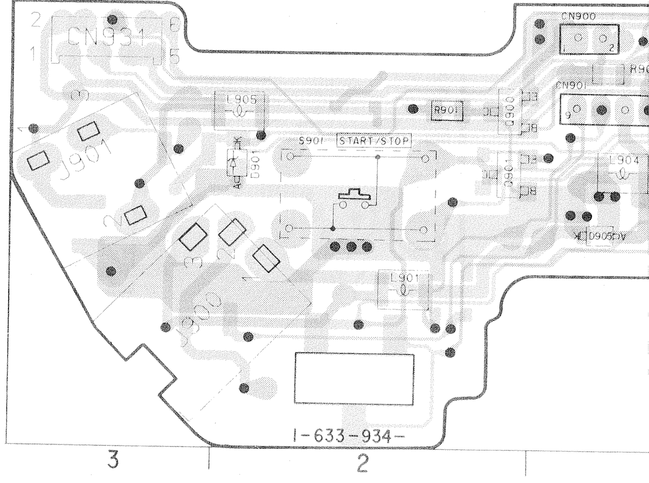
MC-44P BOARD (CONDUCTOR SIDE)


W651
CN652
CN650
BULIT IN MIC
S650
WIND
HIFI
1-633
4
3
G
F

SW-124P BOARD (COMPONENT SIDE)

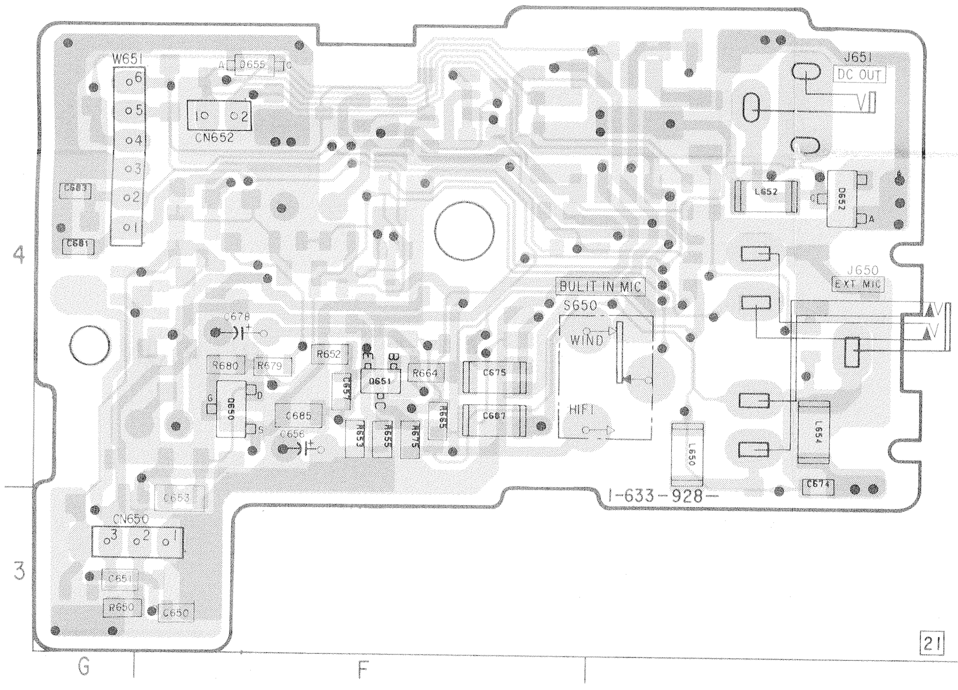

STANDBY
ON
OFF
S900
J900
HEADPHONE
J901
REMOTE
CHASSIS
D900
CN931
1-633-93
F

SW-124P BOARD (CONDUCTOR SIDE)

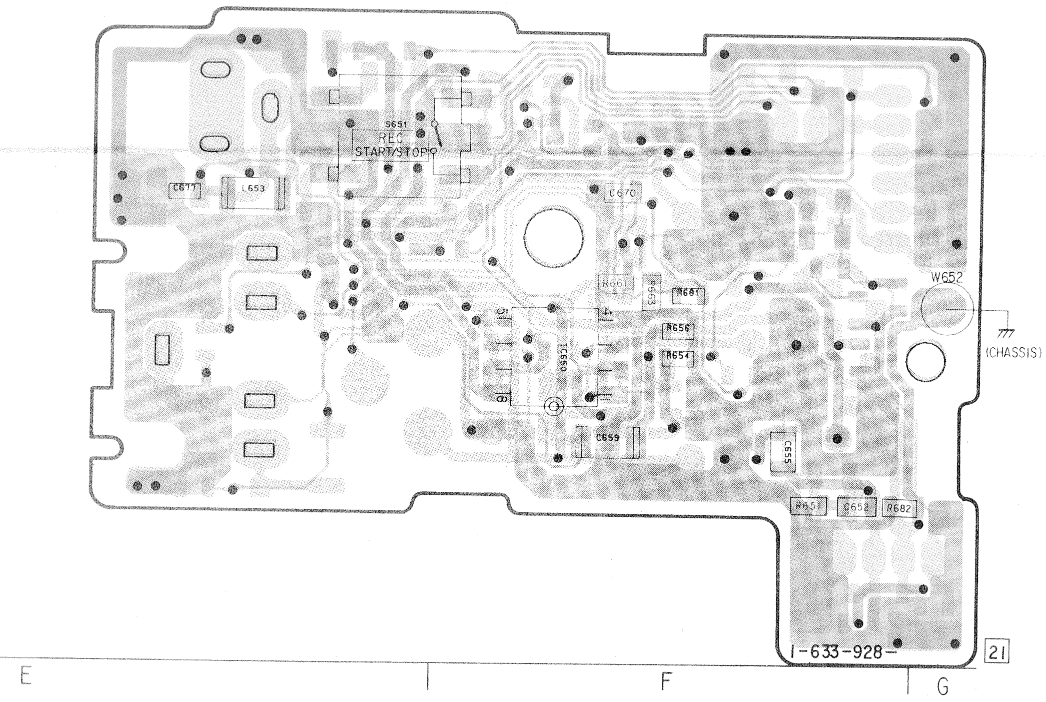

CN931
CN900
S901
START/STOP
J901
J900
1-633-934-
3
2

	8-729-905-12	TRANSISTOR DTA144EU
	8-729-905-18	TRANSISTOR DTC144EU
	8-729-905-35	TRANSISTOR 2SC4081-R
	8-729-905-12	TRANSISTOR DTA144EU
	8-729-905-23	TRANSISTOR 2SA1576-R
	8-729-905-35	TRANSISTOR 2SC4081-R
	8-729-202-38	TRANSISTOR 2SC3326N
	8-729-905-35	TRANSISTOR 2SC4081-R
	8-729-905-18	TRANSISTOR DTC144EU
	8-729-905-23	TRANSISTOR 2SA1576-R
	8-729-905-35	TRANSISTOR 2SC4081-R
	8-729-905-35	TRANSISTOR 2SC4081-R
	8-729-904-07	TRANSISTOR FMG2
	8-729-905-23	TRANSISTOR 2SA1576-R
	8-729-905-18	TRANSISTOR DTC144EU
	8-729-101-07	TRANSISTOR 2SB798-DL
	8-729-905-18	TRANSISTOR DTC144EU
	8-729-905-12	TRANSISTOR DTA144EU
	8-729-905-35	TRANSISTOR 2SC4081-R
	8-729-905-35	TRANSISTOR 2SC4081-R
Q225	8-729-905-12	TRANSISTOR DTA144EU
Q226	8-729-905-35	TRANSISTOR 2SC4081-R
Q227	8-729-905-35	TRANSISTOR 2SC4081-R
Q228	8-729-905-23	TRANSISTOR 2SA1576-R
Q229	8-729-905-35	TRANSISTOR 2SC4081-R
Q231	8-729-905-35	TRANSISTOR 2SC4081-R
Q232	8-729-905-35	TRANSISTOR 2SC4081-R
Q238	8-729-905-23	TRANSISTOR 2SA1576-R
Q240	8-729-905-35	TRANSISTOR 2SC4081-R
Q241	8-729-905-23	TRANSISTOR 2SA1576-R
Q244	8-729-905-18	TRANSISTOR DTC144EU
Q245	8-729-905-XX	TRANSISTOR DTC114TU
Q246	8-729-905-XX	TRANSISTOR DTC114TU
Q247	8-729-905-XX	TRANSISTOR DTC114TU
Q248	8-729-905-18	TRANSISTOR DTC144EU
Q250	8-729-905-35	TRANSISTOR 2SC4081-R
Q251	8-729-905-18	TRANSISTOR DTC144EU
Q301	8-729-905-23	TRANSISTOR 2SA1576-R
Q303	8-729-905-35	TRANSISTOR 2SC4081-R
Q304	8-729-905-35	TRANSISTOR 2SC4081-R
Q306	8-729-905-35	TRANSISTOR 2SC4081-R
Q307	8-729-905-18	TRANSISTOR DTC144EU
Q308	8-729-905-12	TRANSISTOR DTA144EU
Q311	8-729-905-35	TRANSISTOR 2SC4081-R
Q312	8-729-905-12	TRANSISTOR DTA144EU
Q351	8-729-905-35	TRANSISTOR 2SC4081-R
Q352	8-729-905-35	TRANSISTOR 2SC4081-R
Q353	8-729-905-35	TRANSISTOR 2SC4081-R
Q354	8-729-905-35	TRANSISTOR 2SC4081-R
Q356	8-729-905-XX	TRANSISTOR DTC114TU
Q357	8-729-921-58	TRANSISTOR DTA144TU
Q358	8-729-905-18	TRANSISTOR DTC144EU
Q359	8-729-102-07	TRANSISTOR 2SC2223-F13
Q362	8-729-905-18	TRANSISTOR DTC144EU
Q400	8-729-907-39	TRANSISTOR IMD2
Q401	8-729-905-XX	TRANSISTOR DTC114TU
Q406	8-729-402-81	TRANSISTOR XN4501
Q407	8-729-907-39	TRANSISTOR IMD2
Q409	8-729-905-XX	TRANSISTOR DTC114TU
Q411	8-729-216-22	TRANSISTOR 2SA1162
Q412	8-729-905-18	TRANSISTOR DTC144EU
Q413	8-729-905-12	TRANSISTOR DTA144EU
Q417	8-729-905-18	TRANSISTOR DTC144EU
Q430	8-729-905-18	TRANSISTOR DTC144EU
Q432	8-729-905-18	TRANSISTOR DTC144EU

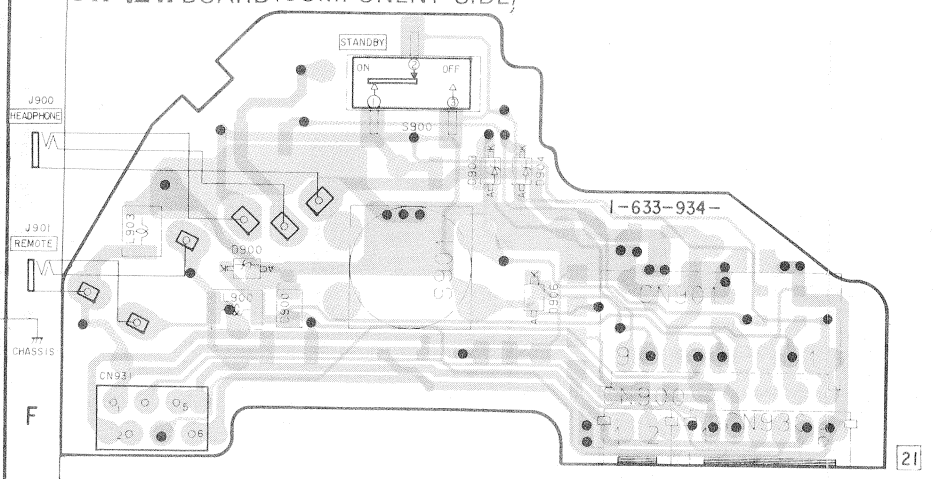
MC-44PBOARD (CONDUCTOR SIDE)


W651
CN652
J651
DC OUT
L652
D652
J650
EXT MIC
BULIT IN MIC
S650
WIND
HIFI
C678
R680
R679
R652
D651
R664
C675
C685
C656
C683
R653
R655
R675
R665
L654
L650
C674
C653
CN650
C651
R660
C650
C683
C681
1-633-928-
4
3
21
G
F

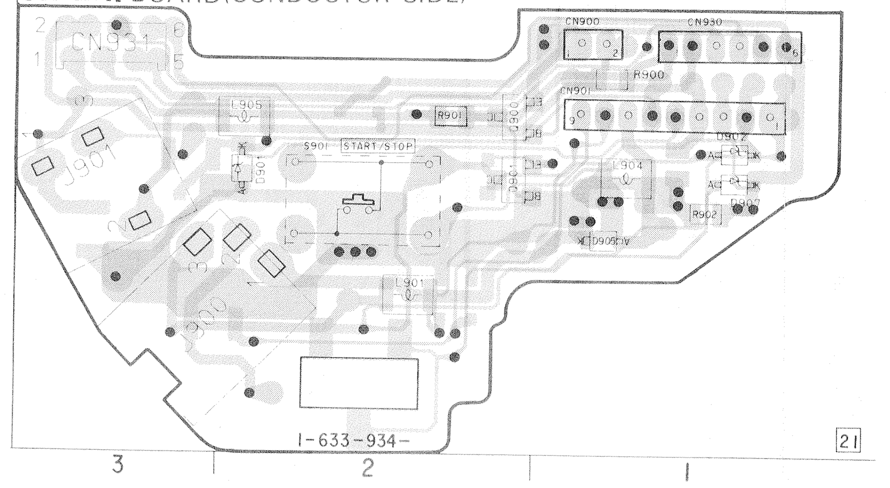
MC-44P BOARD (COMPONENT SIDE)


S651
REC
START/STOP
C677
L653
C670
W652
(CHASSIS)
R661
R663
R681
R656
R654
IC650
C659
C655
R651
C652
R682
1-633-928-
21
E
F
G

SW-124PBOARD(COMPONENT SIDE)


STANDBY
ON
OFF
S900
J900
HEADPHONE
J901
REMOTE
CHASSIS
D900
CN931
CN930
1-633-934-
21
F

SW-124PBOARD(CONDUCTOR SIDE)


CN931
CN900
CN930
R900
R901
S901
START/STOP
D902
D904
D905
L901
1-633-934-
21
3
2
1

DIODE

D900	8-719-977-34	DIODE DTZ12
D901	8-719-977-34	DIODE DTZ12
D902	8-719-940-45	DIODE MA159
D903	8-719-977-34	DIODE DTZ12
D904	8-719-977-34	DIODE DTZ12
D905	8-719-404-46	DIODE MA110
D906	8-719-404-46	DIODE MA110-TX

TRANSISTOR

Q900	8-729-901-01	TRANSISTOR DTC144EK
Q901	8-729-902-XX	TRANSISTOR DTC114TK

DIODE

D652	8-719-106-43	DIODE RD9.1M-B1
D655	8-719-404-46	DIODE MA110

IC

IC650	8-759-822-37	IC LA7293M-TE-L

TRANSISTOR

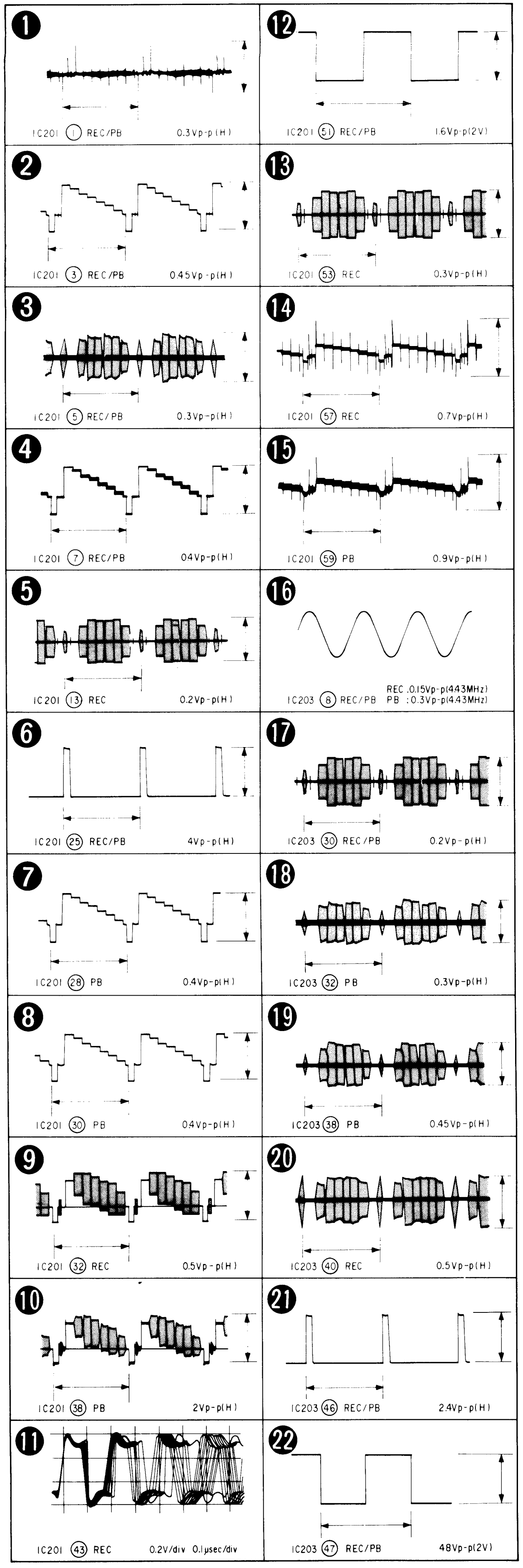
Q650	8-729-109-44	TRANSISTOR 2SK94
Q651	8-729-905-35	TRANSISTOR 2SC4081-R

21

MC-44P (MIC), SW-124P (SWITCH, JACK), VA-46P (VIDEO/AUDIO) SCHEMATIC DIAGRAM

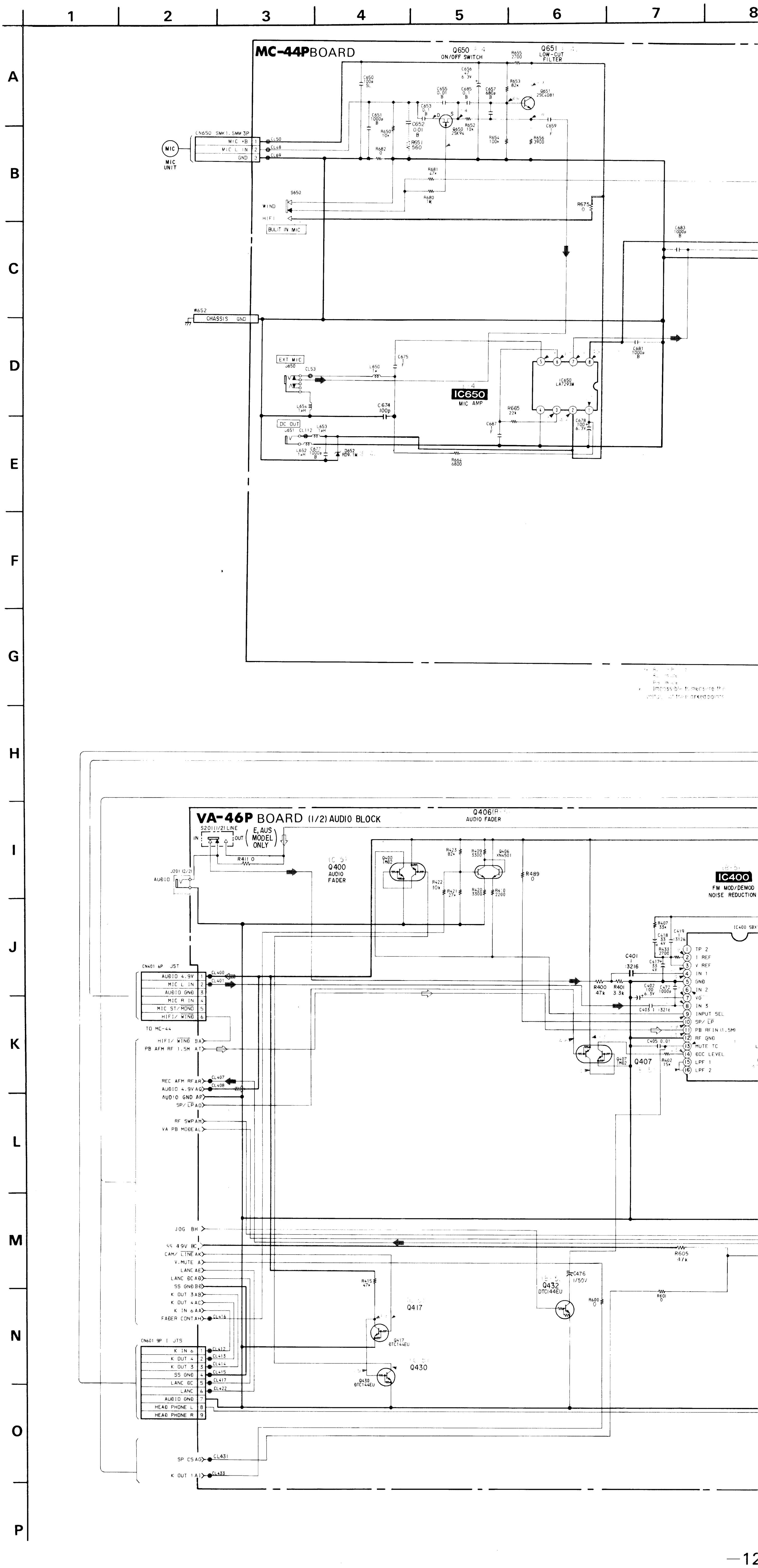
—Ref. No. MC-44P BOARD : 2000 series, SW-124P, VA-46P BOARDS : 3000 series—

VA-46P BOARD

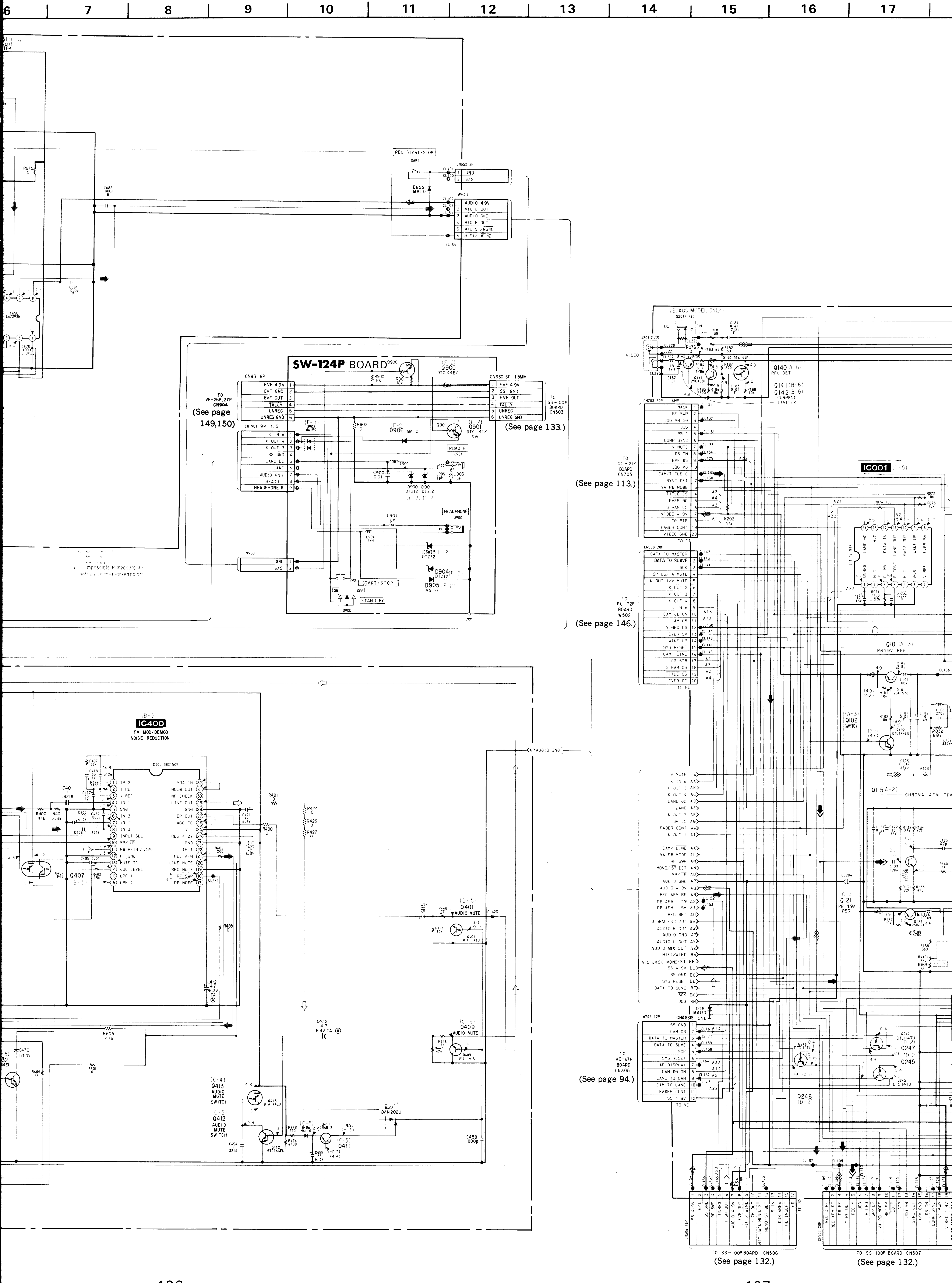


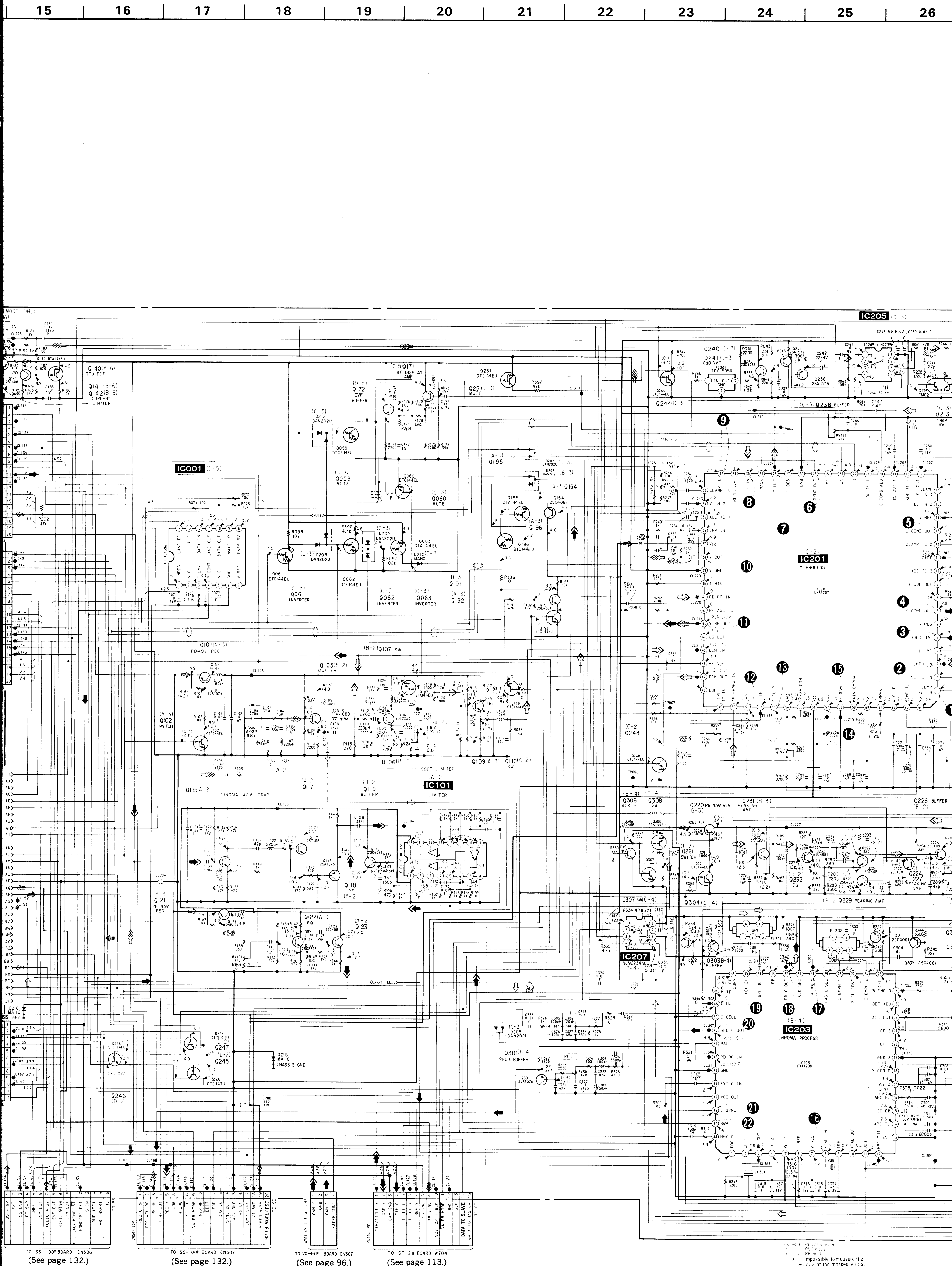
• Signal path

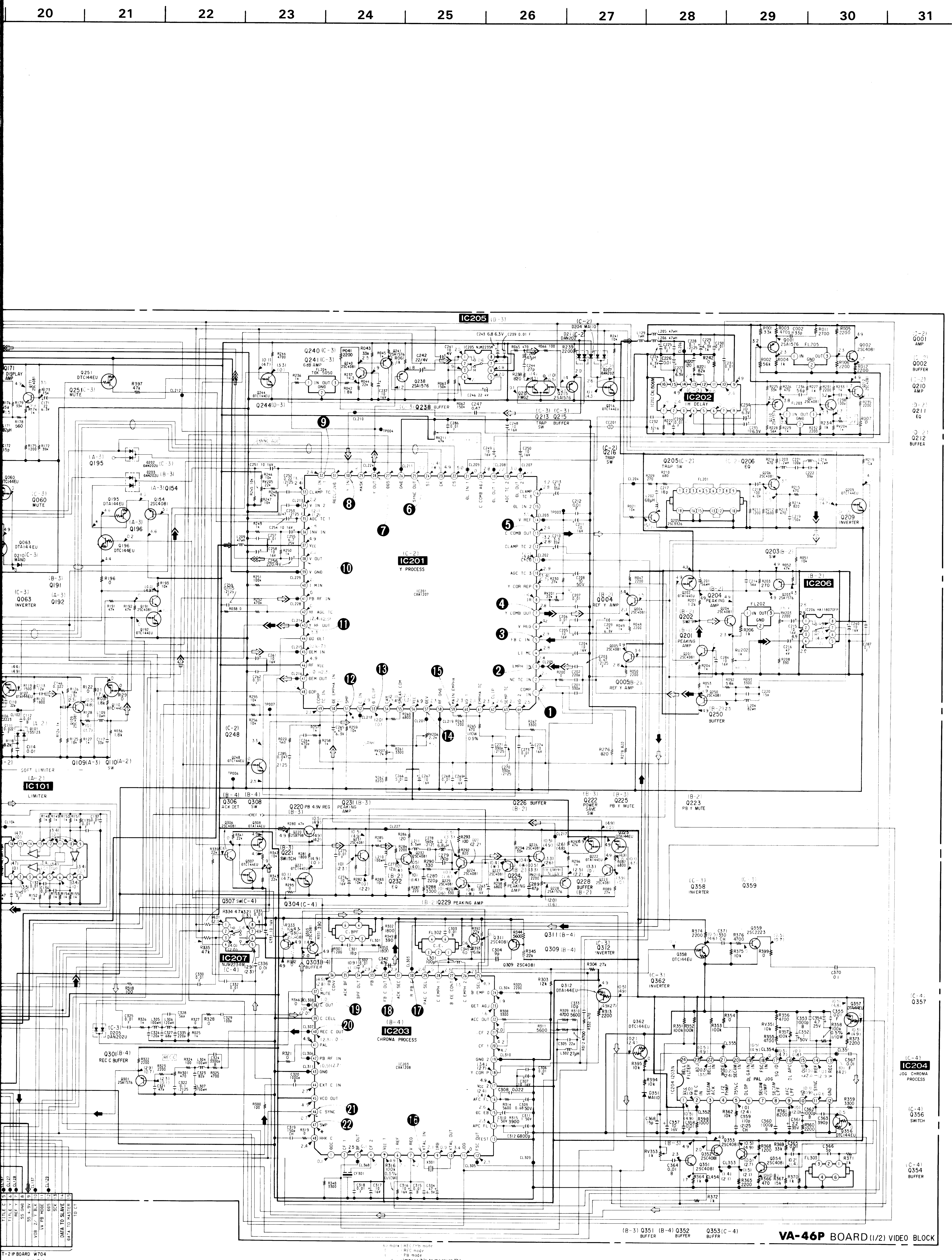
	VIDEO Signal			AUDIO Signal
	CHROMA	Y	Y/CHROMA	
REC	➡	➡»	➡»»	➡
PB	⇨	⇨»	⇨»»	⇨



1
2
3
4
5
6
7
8
A
B
C
D
E
F
G
H
I
J
K
L
M
N
O
P
MC-44P BOARD
Q650 ON/OFF SWITCH
Q651 LOW-CUT FILTER
MIC
MIC UNIT
CN650 SMK1.5MM 3P
MIC +B
MIC L IN
GND
S650
WIND
HIFI
BULIT IN MIC
CHASSIS GND
EXT MIC
J650
DC OUT
J651
IC650
MIC AMP
IC650 LA7293M
VA-46P BOARD (1/2) AUDIO BLOCK
S201 (1/2) LINE
IN
OUT
(E, AUS MODEL ONLY)
Q406 AUDIO FADER
Q400 AUDIO FADER
IC400
FM MOD/DEMOD NOISE REDUCTION
CN401 6P JST
AUDIO 4.9V
MIC L IN
AUDIO GND
MIC R IN
MIC ST/MONO
HIFI/WIND
TO MC-44
HIFI/WIND 8A
PB AFM RF 1.5M A7
REC AFM RF AR
AUDIO 4.9V AQ
AUDIO GND AP
SP/LP AO
RF SWP AM
VA PB MODE AL
JOG BH
SS 4.9V BC
CAM/LINE AK
V.MUTE A
LANC AE
LANC DC AD
SS GND BB
K OUT 3 AB
K OUT 4 AC
K IN 6 AA
FADER CONT AH
CN601 9P I JTS
K IN 6
K OUT 4
K OUT 3
SS GND
LANC DC
LANC
AUDIO GND
HEAD PHONE L
HEAD PHONE R
SP CS AG
K OUT 1 AJ
Q407
Q417
Q430
Q432 DTC144EU
R605 47k
TP 2
I REF
V REF
IN 1
GND
IN 2
VG
IN 3
INPUT SEL
SP/LP
PB RF IN (1.5M)
RF GND
MUTE TC
ODC LEVEL
LPF 1
LPF 2

6
7
8
9
10
11
12
13
14
15
16
17
REC START/STOP
S651
CN652 2P
GND
S/S
D655
MA110
W651
AUDIO 4.9V
MIC L OUT
AUDIO GND
MIC R OUT
MIC ST/MONO
HIFI/ WIND
R675
C683
C681
IC650
LA7293M
SW-124P BOARD
Q900
DTC144EK
CN931 6P
EVF 4.9V
EVF GND
EVF OUT
TALLY
UNREG
UNREG GND
CN930 6P 1.5MM
EVF 4.9V
SS GND
EVF OUT
TALLY
UNREG
UNREG GND
TO VF-26P,27P CN904
(See page 149,150)
TO SS-100P BOARD CN503
(See page 133.)
CN 901 9P 1.5
K IN 6
K OUT 4
K OUT 3
SS GND
LANC DC
LANC
AUDIO GND
HEAD L
HEADPHONE R
D902 MA159
R902
D906 MA110
Q901
DTC114TK
SW
REMOTE
J901
C900 0.01
D900 D901
DTZ12 DTZ12
L905 1μH
L903 1μH
L901 1μH
HEADPHONE
J900
L904
D903
DTZ12
D904
DTZ12
D905
MA110
W900
GND
S/S
S901
START/STOP
ON
OFF
STAND BY
S900
Impossible to measure the voltage of the marked point.
IC400
FM MOD/DEMOD
NOISE REDUCTION
IC400 SBX1505
TP 2
I REF
V REF
IN 1
GND
IN 2
VG
IN 3
INPUT SEL
SP/LP
PB RFIN (1.5M)
RF GND
MUTE TC
OOC LEVEL
LPF 1
LPF 2
MOA IN
MOLD OUT
NR CHECK
LINE OUT
GND
EP OUT
AGC TC
VCC
REG 4.2V
GND
TP 1
REC AFM
LINE MUTE
REC MUTE
RF SWP
PB MODE
Q407
R400 47k
R401 3.3k
C401 3216
R491
R424
R426
R427
R430
R485
C412 47 6.3V TA
R605 47k
AP AUDIO GND
Q401
AUDIO MUTE
DTC114TU
Q409
AUDIO MUTE
C472 4.7 6.3V TA
Q413
AUDIO MUTE SWITCH
DTA144EU
Q412
AUDIO MUTE SWITCH
DTC144EU
Q411
2SA812
D406 MA110
D408 DAN202U
C459 1000p
C454 3216
C455
(E, AUS MODEL ONLY)
S201 (1/2)
OUT
IN
J201 (1/2)
VIDEO
Q140 DTA144EU
Q140 RFU DET
Q141 2SC4081
Q141 Q142 CURRENT LIMITER
CN703 20P AMP
MASK
RF SWP
JOG V6.5G
JOG
PB C
COMP SYNC
V MUTE
BS ON
EVF BS
JOG VB
CAM/TITLE C
SYNC DET
VA PB MODE
TITLE CS
EVER OC
S RAM CS
VIDEO 4.9V
CG STB
FADER CONT
VIDEO GND
TO CT-21P BOARD CN705
(See page 113.)
TO CT
IC001
IC TL7596
LANC DC
H/C
DATA IN
LANC OUT
DATA OUT
WAKE UP
EVER 5V
UNREG
LANC
V REF
CN508 20P
DATA TO MASTER
DATA TO SLAVE
SCK
SP CS/ A MUTE
K OUT 1/V MUTE
K OUT 2
K OUT 3
K OUT 4
K IN 6
CAM 00 ON
LAM CS
VIDEO CS
LVLH 5V
WAKE UP
SYS RESET
CAM/ LINE
CG STB
S RAM CS
TITLE CS
EVER OC
TO FU
TO FU-72P BOARD W502
(See page 146.)
Q101
PB4.9V REG
Q101 2SA1576
Q102 SWITCH
DTC144EU
Q115
CHROMA AFM TRA
Q121
PB 4.9V REG
2SB624
V MUTE
K IN 6
K OUT 3
K OUT 4
LANC DC
LANC
K OUT 2
SP CS
FADER CONT
K OUT 1
CAM/ LINE
VA PB MODE
RF SWP
MONO/ ST DET
SP/ LP
AUDIO GND
AUDIO 4.9V
REC AFM RF
PB AFM 1.7M
PB AFM 1.5M
RFU DET
3.58M FSC OUT
AUDIO R OUT
AUDIO GND
AUDIO L OUT
AUDIO MIX OUT
HIFI/WIND
MIC JACK MONO/ST
SS 4.9V
SS GND
SYS RESET
DATA TO SLVE
SCK
JOG
D216 MA110
CHASSIS GND
W702 12P
SS GND
CAM CS
DATA TO MASTER
DATA TO SLVE
SCK
SYS RESET
AF DISPLAY
CAM 00 ON
LANC TO CAM
CAM TO LANC
FADER CONT
SS 4.9V
TO VC
TO VC-67P BOARD CN305
(See page 94.)
Q246
Q247
DTC114TU
Q245
DTC114TU
CN506 16P
TO SS-100P BOARD CN506
(See page 132.)
CN507 20P
TO SS-100P BOARD CN507
(See page 132.)


15
16
17
18
19
20
21
22
23
24
25
26
IC001 (D-5)
IC101 LIMITER
IC201 Y PROCESS
IC203 CHROMA PROCESS
IC205 (D-3)
IC207 NJM2234M
Q140 (A-6) RFU DET
Q141 (B-6) Q142 (B-6) CURRENT LIMITER
Q171 (C-5) AF DISPLAY AMP
Q172 (D-5) EVF BUFFER
Q059 MUTE
Q060 MUTE
Q061 INVERTER
Q062 INVERTER
Q063 INVERTER
Q251 DTC144EU MUTE
Q195
Q196
Q154
Q191
Q192
Q101 (A-3) PB 4.9V REG
Q102 SWITCH
Q105 (B-2) BUFFER
Q107 SW
Q106 (B-2) SOFT LIMITER
Q109 (A-3)
Q110 (A-2) SW
Q115 (A-2) CHROMA AFM TRAP
Q117
Q119 BUFFER
Q118 LPF
Q121 PB 4.9V REG
Q122 (A-2) EQ
Q123 (A-2) EQ
Q245
Q246 (D-2)
Q247
D215 MA110 CHASSIS GND
D216 MA110
Q240 (C-3) Q241 (C-3) 6dB AMP
Q244 (D-3)
Q238 BUFFER
Q213 TRAP SW
Q248 (C-2)
Q306 ACK DET
Q308 SW
Q220 PB 4.9V REG
Q231 (B-3) PEAKING AMP
Q226 BUFFER
Q221 SWITCH
Q232 EQ
Q229 PEAKING AMP
Q307 SW (C-4)
Q304 (C-4)
Q303 (B-4) BUFFER
Q309 2SC4081
Q301 (B-4) REC C BUFFER
D205 DAN202U
TO SS-100P BOARD CN506 (See page 132.)
TO SS-100P BOARD CN507 (See page 132.)
TO VC-67P BOARD CN307 (See page 96.)
TO CT-21P BOARD W704 (See page 113.)
TO SS
TO CT
DATA TO SLAVE
RP PB MODE/FSC
(): REC/PB mode
*: Impossible to measure the voltage at the marked points.


20
21
22
23
24
25
26
27
28
29
30
31
IC205
IC201
Y PROCESS
IC202
1H DELAY
IC206
IC207
NJM2234M
IC203
CHROMA PROCESS
IC204
JOG CHROMA PROCESS
IC101
LIMITER
Q240 (C-3)
Q241 (C-3)
6dB AMP
Q238 BUFFER
Q244 (D-3)
Q213 Q215
TRAP BUFFER SW
Q216 TRAP SW
Q205 (C-2) TRAP SW
Q206 EQ
Q209 INVERTER
Q001 AMP
Q002 BUFFER
Q210 AMP
Q211 EQ
Q212 BUFFER
Q203 (B-2) SW
Q004 REF Y AMP
Q202 SW
Q201 PEAKING AMP
Q204 PEAKING AMP
Q005 (B-2) REF Y AMP
Q250 BUFFER
Q248
Q222 POWER SAVE SW
Q225 PB Y MUTE
Q223 PB Y MUTE
Q306 ACK DET
Q308 SW
Q220 PB 4.9V REG
Q231 (B-3) PEAKING AMP
Q226 BUFFER
Q221 SWITCH
Q232 EQ
Q224 PEAKING AMP
Q228 BUFFER
Q229 PEAKING AMP
Q307 SW (C-4)
Q304 (C-4)
Q303 (B-4) BUFFER
Q311 (B-4)
Q309 (B-4)
Q312 INVERTER
Q358 INVERTER
Q359
Q362 INVERTER
Q357
Q356 SWITCH
Q354 BUFFER
Q301 (B-4) REC C BUFFER
Q205 DAN202U
Q251 MUTE
Q195
Q154
Q196
Q060 MUTE
Q063 INVERTER
Q191
Q192
Q171 DISPLAY AMP
Q109 (A-3)
Q110 (A-2) SW
SOFT LIMITER
(B-3) Q351 BUFFER
(B-4) Q352 BUFFER
Q353 (C-4) BUFFER
TITLE
REF
SS GND
SS 4.9V
VDB 2/Y BLK
VA PB MODE
SCE
DATA TO SLAVE
DATA TO MASTER
T-2 IP BOARD W704

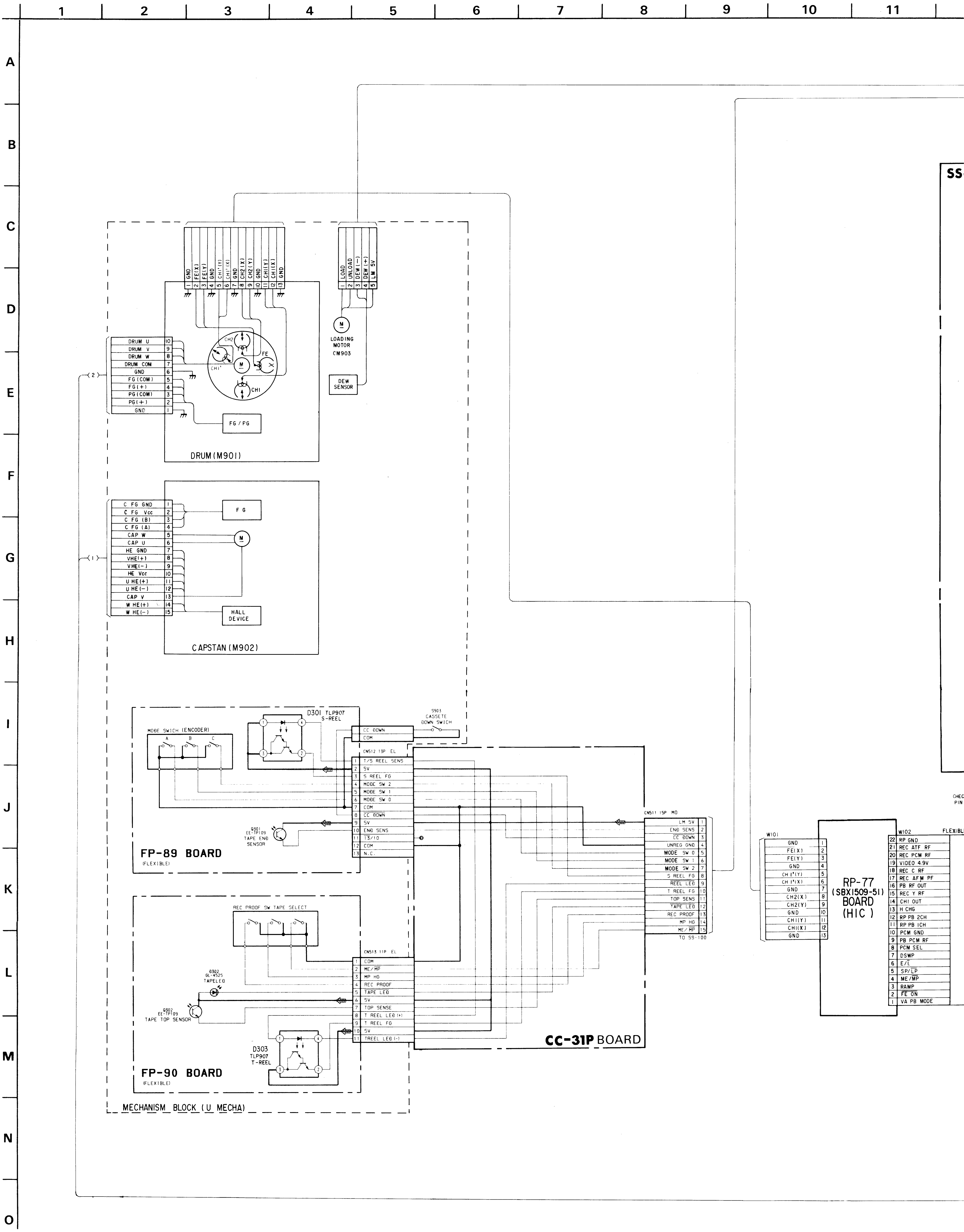
VA-46P BOARD (1/2) VIDEO BLOCK

(See page 113.)

no mark : REC/PB mode
( ) : REC mode
( ) : PB mode
* : Impossible to measure the voltage at the marked points.

CC-31P (Relay), SS-100P (SERVO/SYSTEM CONTROL), FP-89, FP-90 (MECHADECK FLEXIBLE) SCHEMATIC DIAGRAM

—Ref. No. CC-31P BOARD: 2000 series, SS-100P BOARD: 4000 series—


1
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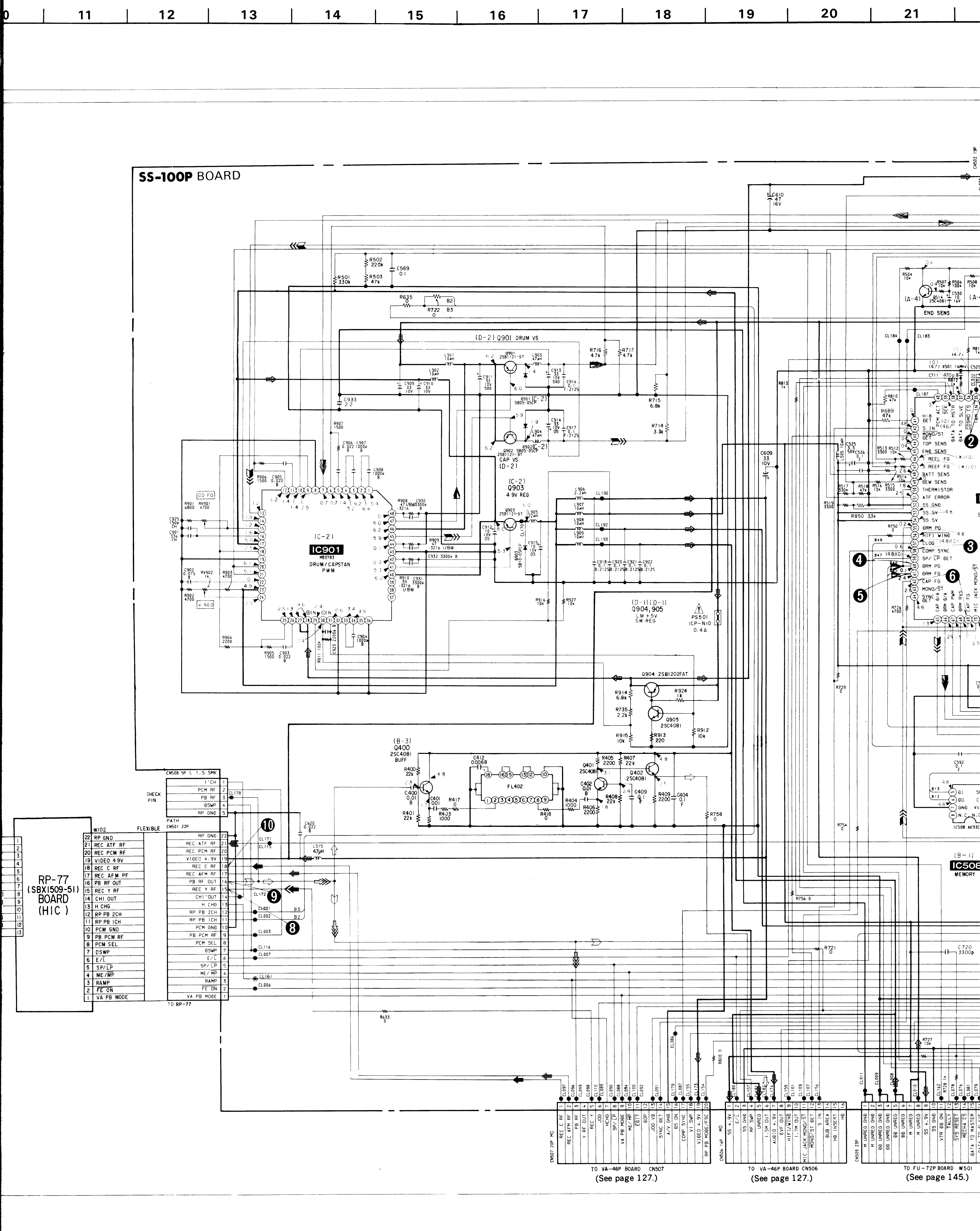
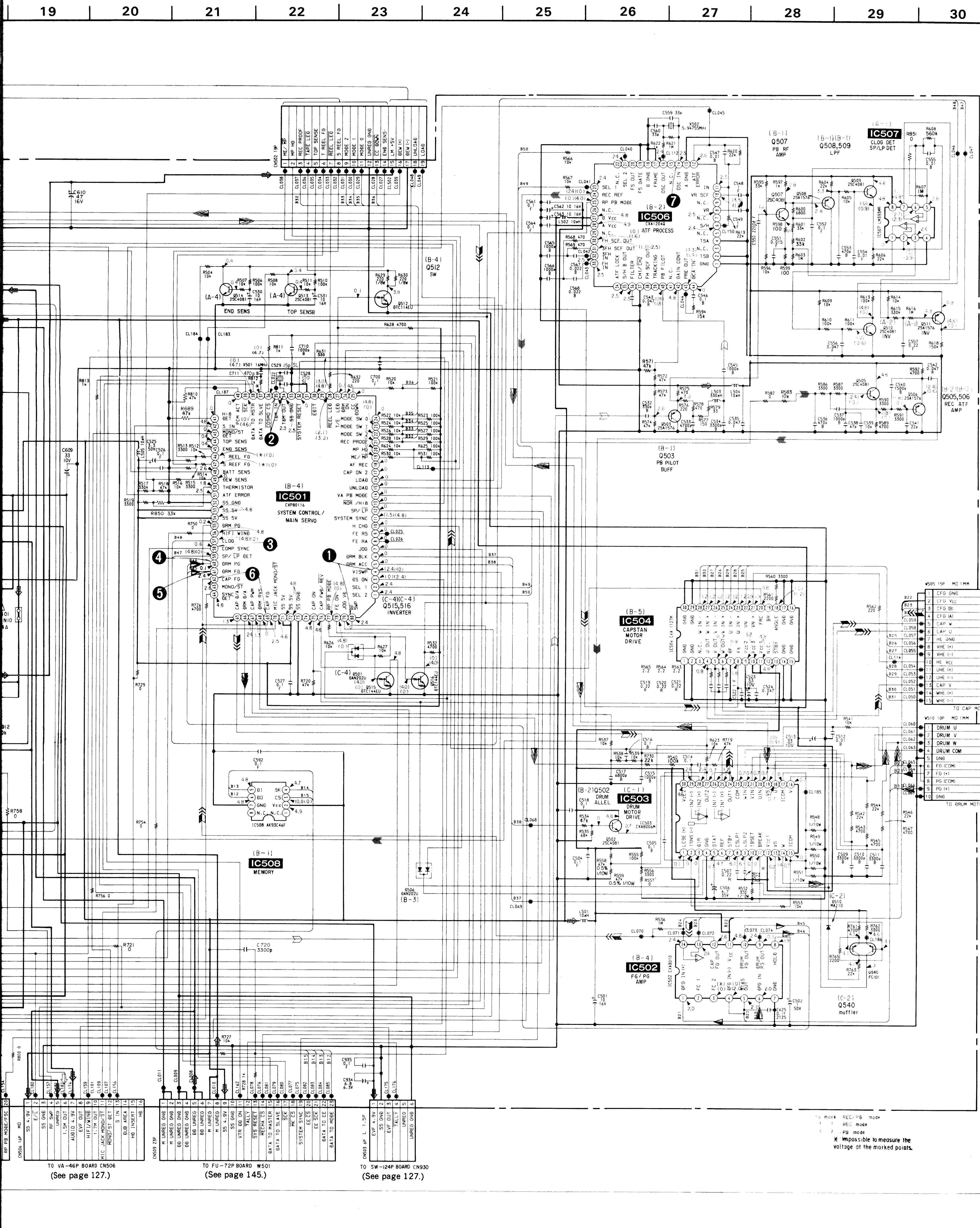
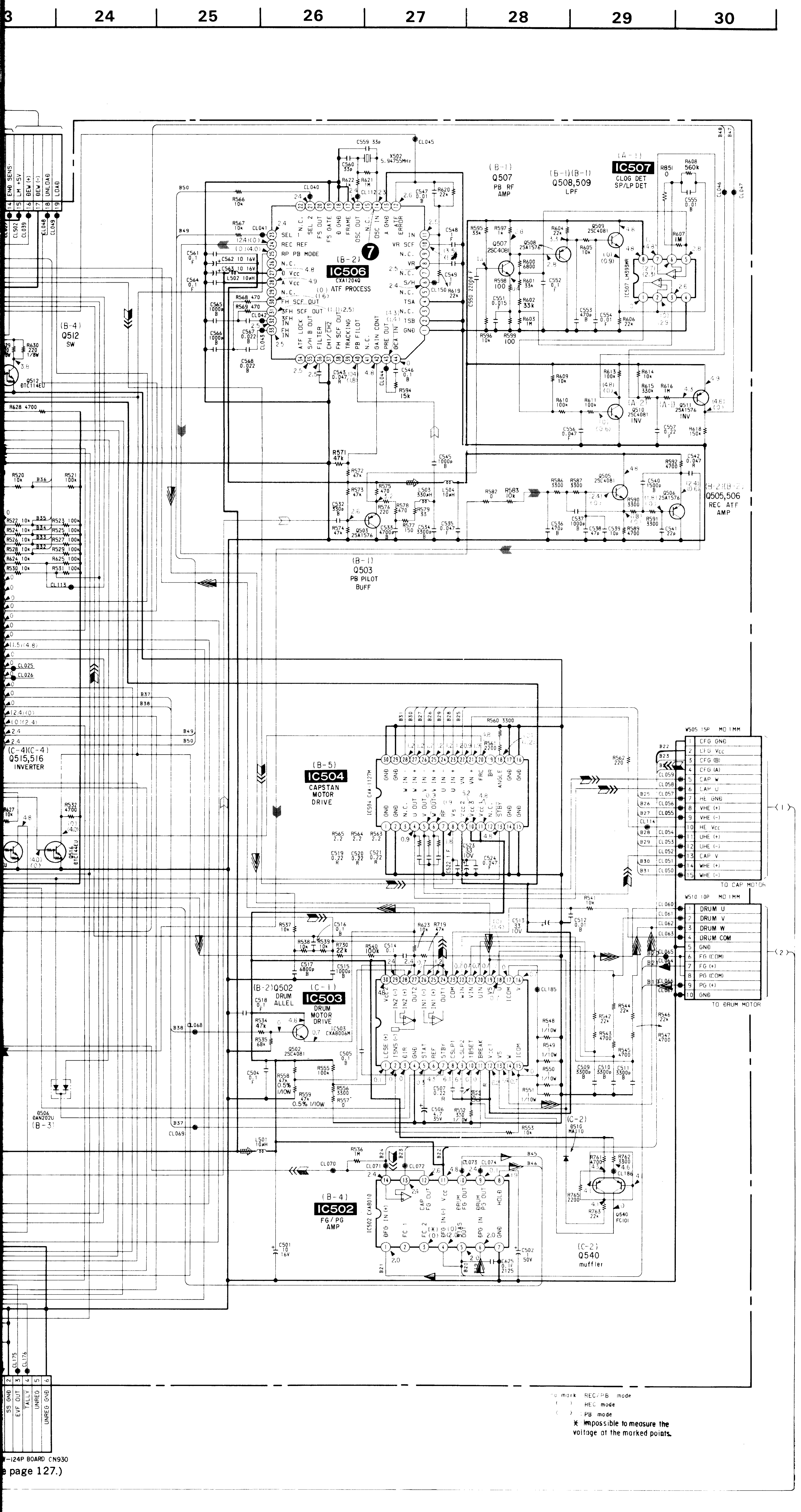
9
10
11
A
B
C
D
E
F
G
H
I
J
K
L
M
N
O
SS
1 GND
2 FE(X)
3 FE(Y)
4 GND
5 CH1'(Y)
6 CH1'(X)
7 GND
8 CH2(X)
9 CH2(Y)
10 GND
11 CH1(Y)
12 CH1(X)
13 GND
1 LOAD
2 UNLOAD
3 DEW(−)
4 DEW(+)
5 LM 5V
M
LOADING MOTOR CM903
DEW SENSOR
CH2
FE
CH1'
CH1
M
DRUM U 10
DRUM V 9
DRUM W 8
DRUM COM 7
GND 6
FG(COM) 5
FG(+) 4
PG(COM) 3
PG(+) 2
GND 1
(2)
FG/PG
DRUM(M901)
C FG GND 1
C FG Vcc 2
C FG (B) 3
C FG (A) 4
CAP W 5
CAP U 6
HE GND 7
VHE(+) 8
VHE(−) 9
HE Vcc 10
U HE(+) 11
U HE(−) 12
CAP V 13
W HE(+) 14
W HE(−) 15
(1)
FG
M
HALL DEVICE
CAPSTAN(M902)
D301 TLP907 S-REEL
MODE SWICH (ENCODER)
A
B
C
S903 CASSETE DOWN SWICH
CC DOWN
COM
CN512 13P EL
1 T/S REEL SENS
2 5V
3 S REEL FG
4 MODE SW 2
5 MODE SW 1
6 MODE SW 0
7 COM
8 CC DOWN
9 5V
10 END SENS
11 13/10
12 COM
13 N.C.
Q301 EE-TP109 TAPE END SENSOR
FP-89 BOARD
(FLEXIBLE)
REC PROOF SW TAPE SELECT
CN513 11P EL
1 COM
2 ME/MP
3 MP HG
4 REC PROOF
5 TAPE LED
6 5V
7 TOP SENSE
8 T REEL LED (+)
9 T REEL FG
10 5V
11 TREEL LED (−)
D302 GL-4525 TAPELED
Q302 EE-TP109 TAPE TOP SENSOR
D303 TLP907 T-REEL
FP-90 BOARD
(FLEXIBLE)
MECHANISM BLOCK (U MECHA)
CN511 15P MD
LM 5V 1
END SENS 2
CC DOWN 3
UNREG GND 4
MODE SW 0 5
MODE SW 1 6
MODE SW 2 7
S REEL FG 8
REEL LED 9
T REEL FG 10
TOP SENS 11
TAPE LED 12
REC PROOF 13
MP HG 14
ME/MP 15
TO SS-100
CC-31P BOARD
W101
GND 1
FE(X) 2
FE(Y) 3
GND 4
CH1'(Y) 5
CH1'(X) 6
GND 7
CH2(X) 8
CH2(Y) 9
GND 10
CH1(Y) 11
CH1(X) 12
GND 13
RP-77 (SBX1509-51) BOARD (HIC)
W102
FLEXIBL
22 RP GND
21 REC ATF RF
20 REC PCM RF
19 VIDEO 4.9V
18 REC C RF
17 REC AFM PF
16 PB RF OUT
15 REC Y RF
14 CH1 OUT
13 H CHG
12 RP PB 2CH
11 RP PB 1CH
10 PCM GND
9 PB PCM RF
8 PCM SEL
7 DSWP
6 E/L
5 SP/LP
4 ME/MP
3 RAMP
2 FE ON
1 VA PB MODE
CHEC PIN


11
12
13
14
15
16
17
18
19
20
21
SS-100P BOARD
(C-2) IC901 MB3783 DRUM/CAPSTAN PWM
(D-2) Q901 DRUM VS
Q901 2SB1121-ST
Q902 2SB1121-ST CAP VS (D-2)
(C-2) Q903 4.9V REG
(D-1)(D-1) Q904, 905 LM +5V SW REG
PS501 ICP-N10 0.4A
Q904 2SB1202FAT
Q905 2SC4081
(B-3) Q400 2SC4081 BUFF
Q401 2SC4081
Q402 2SC4081
FL402
CN508 5P L 1.5 SMK
CHECK PIN
FLEXIBLE PATH CN501 22P
W102
RP-77 (SBX1509-51) BOARD (HIC)
RP GND
REC ATF RF
REC PCM RF
VIDEO 4.9V
REC C RF
REC AFM PF
PB RF OUT
REC Y RF
CH1 OUT
H CHG
RP PB 2CH
RP PB 1CH
PCM GND
PB PCM RF
PCM SEL
DSWP
E/L
SP/LP
ME/MP
RAMP
FE ON
VA PB MODE
TO RP-77
END SENS
(B-1) IC508 MEMORY
CN507 20P MC
TO VA-46P BOARD CN507
(See page 127.)
CN506 16P MQ
TO VA-46P BOARD CN506
(See page 127.)
CN509 23P
TO FU-72P BOARD W501
(See page 145.)


19
20
21
22
23
24
25
26
27
28
29
30
CN502 19P
ME/MP
MP HG
REC PROOF
TAPE LED
TOP SENSE
T REEL FG
S REEL FG
MODE 2
MODE 1
MODE 0
UNREG GND
CC DOWN
END SENS
LM +5V
BEW (+)
BEW (-)
UNLOAD
LOAD
(B-2) IC506 CXA1204Q ATF PROCESS
(B-1) Q507 PB RF AMP
(B-1)(B-1) Q508,509 LPF
(A-1) IC507 CLOG DET SP/LP DET
(B-4) Q512 SW
END SENS
TOP SENSE
(A-4) Q514 2SC4081
(A-4) Q513 2SC4081
(B-4) IC501 CXP80116 SYSTEM CONTROL / MAIN SERVO
(C-4)(C-4) Q515,516 INVERTER
(B-1) Q503 PB PILOT BUFF
(B-2)(B-2) Q505,506 REC ATF AMP
(B-5) IC504 CAPSTAN MOTOR DRIVE
(C-1) IC503 DRUM MOTOR DRIVE
(B-2) Q502 DRUM ALLEL
(B-1) IC508 MEMORY
IC508 AK93C46F
(B-4) IC502 FG/PG AMP
(C-2) Q540 muffler
W505 15P MO 1MM
CFG GND
CFG Vcc
CFG (B)
CAP W
CAP U
HE GND
VHE (+)
VHE (-)
HE Vcc
UHE (+)
UHE (-)
CAP V
WHE (+)
WHE (-)
TO CAP MO
W510 10P MO 1MM
DRUM U
DRUM V
DRUM W
DRUM COM
GND
FG (COM)
FG (+)
PG (COM)
PG (+)
GND
TO DRUM MOT
RP PB MODE/FSC
CN506 16P MO
SS 4.9V
E/L
SS GND
RF SWP
UNREG
1.5M OUT
EVF OUT
AUDIO 4.9V
HIFI/WIND
1.7M OUT
MIC JACK MONO/ST
MONO/ST DET
S IN
DUB AREA
HD INSERT
HD
TO VA-46P BOARD CN506
(See page 127.)
CN509 23P
M UNREG GND
M UNREG GND
DD UNREG GND
DD UNREG
M UNREG
M UNREG
SS 4.9V
SS GND
VTR DD ON
TALLY
SYS RESET
MECHA CS
DATA TO MASTER
DATA TO SLAVE
SCK
MK CS
SYSTEM SYNC
EE CS
EE SCK
DATA TO EE
DATA TO EE
TO FU-72P BOARD W501
(See page 145.)
CN503 6P L 1.5P
EVF 4.9V
EVF OUT
TALLY
UNREG
UNREG GND
TO SW-124P BOARD CN930
(See page 127.)

No mark REC/PB mode
( ) REC mode
⟨ ⟩ PB mode
✱ Impossible to measure the voltage at the marked points.

SERVO/SYSTEM CONTROL SERVO/SYSTEM CONTR


24
25
26
27
28
29
30
IC506
CXA1204Q
ATF PROCESS
IC507
CLOG DET
SP/LP DET
Q507
PB RF
AMP
Q508,509
LPF
Q512
SW
Q503
PB PILOT
BUFF
Q505,506
REC ATF
AMP
Q510
INV
Q511
INV
IC504
CAPSTAN
MOTOR
DRIVE
Q515,516
INVERTER
IC503
DRUM
MOTOR
DRIVE
Q502
DRUM
ALLEL
IC502
FG/PG
AMP
Q540
muffler
TO CAP MOTOR
TO DRUM MOTOR
W-124P BOARD CN930
page 127.)

no mark : REC/PB mode
( ) : REC mode
( ) : PB mode
✱ Impossible to measure the voltage at the marked points.

• Signal path

	VIDEO Signal			AUDIO Signal
	CHROMA	Y	Y/CHROMA	
REC	➡	➡›	➡»	➡
PB	⇨	⇨›	⇨»	⇨

• Signal path

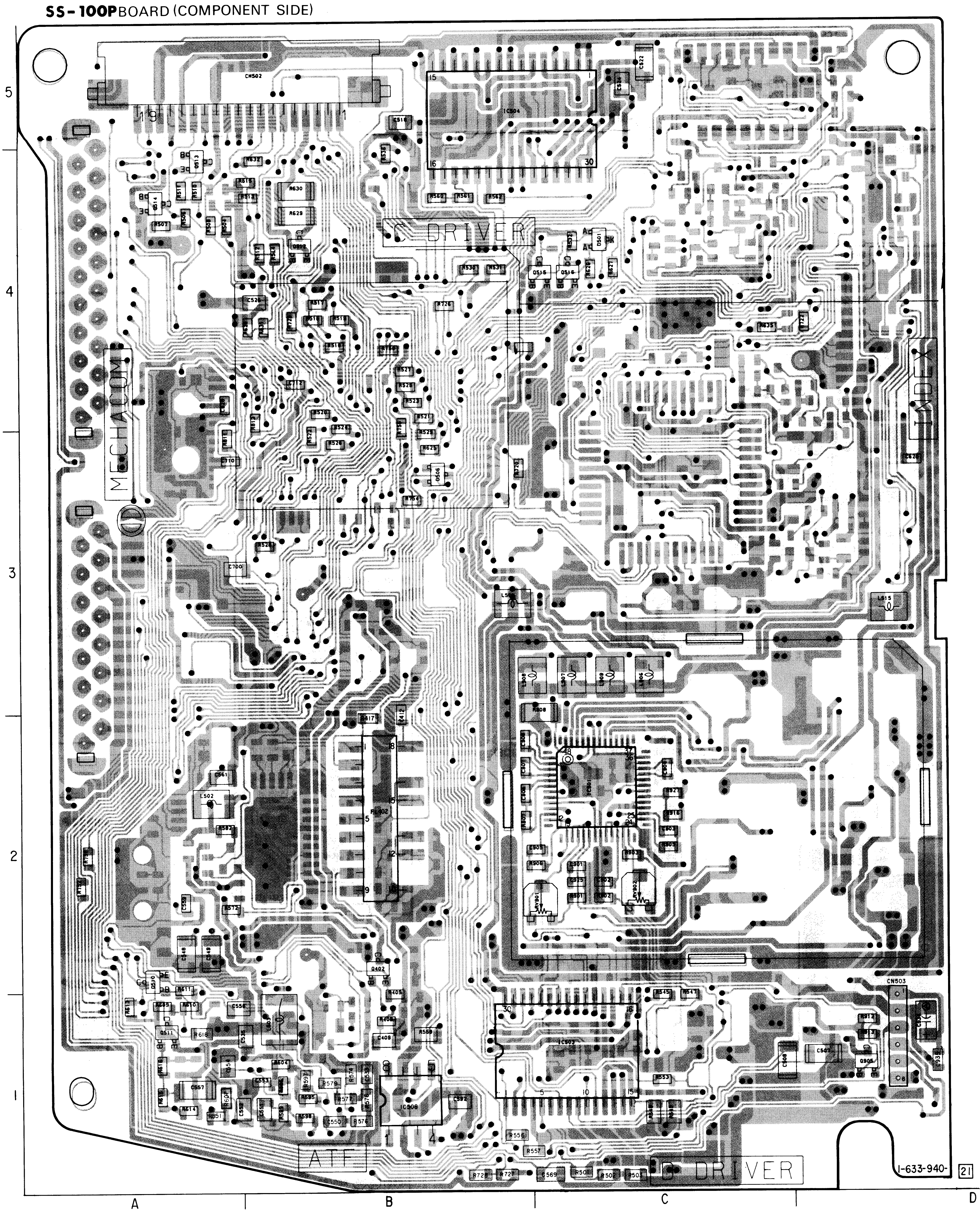
	REC	REC/PB	PB
Drum speed servo		▷	
Drum phase servo		▷	
Drum servo(speed and phase)		▷»	
Capstan speed servo		⊳	
Capstan phase servo	➤›	⊳›	▷›
Capstan servo(speed and phase)		⊳»	
Ref.signal	➤	⊳	▷

SERVO/SYSTEM CONTROL SERVO/SYSTEM CONTROL

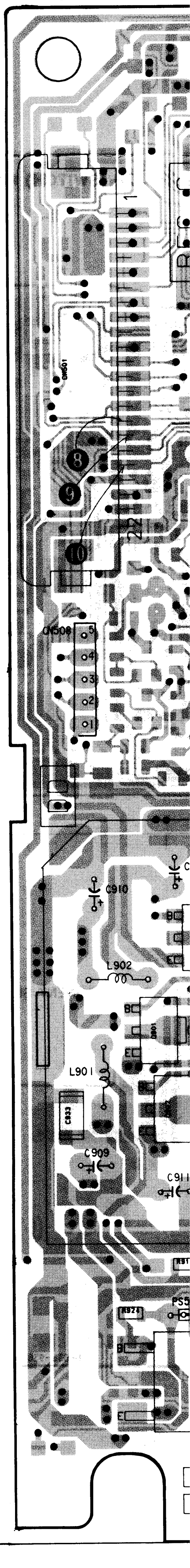
CC-31P (Relay), SS-100P (SERVO/SYSTEM CONTROL), FP-89, FP-90 (MECHADECK FLEXIBLE) PRINTED WIRING BOARDS

—Ref. No. CC-31P BOARD: 2000 series, SS-100P BOARD: 4000 series—

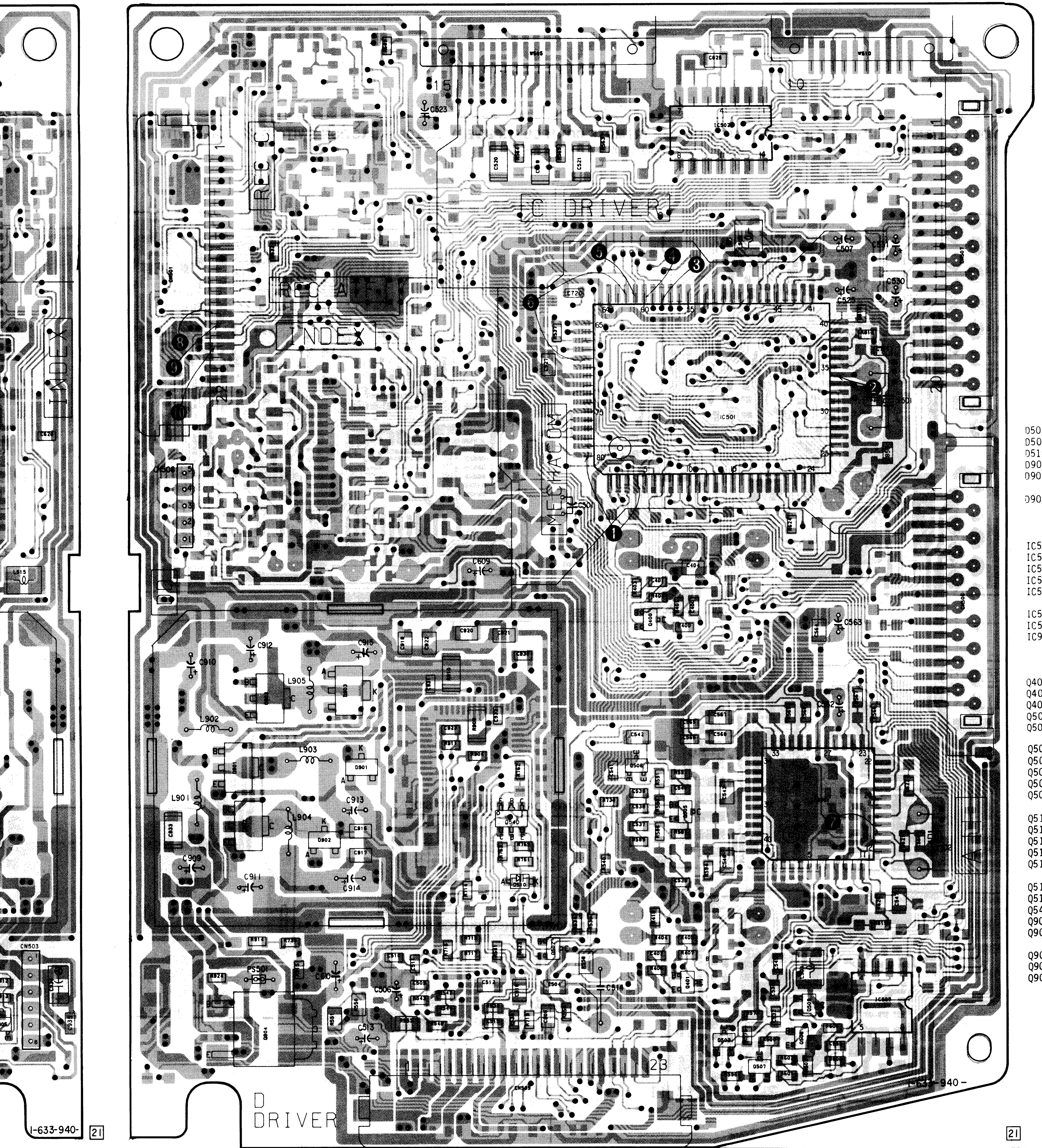
SS-100P BOARD (COMPONENT SIDE)


5
4
3
2
1
A
B
C
D
CN502
19
1
IC504
15
16
30
C DRIVER
MECHACOM
INDEX
IC501
IC502
IC503
IC508
CN503
L502
L515
RV801
RV802
ATF
C DRIVER
1-633-940-
21

SS-100P BOARD (C


CN501
C910
L902
L901
C909
C911
C832

SS-100P BOARD (CONDUCTOR SIDE)



DIODE

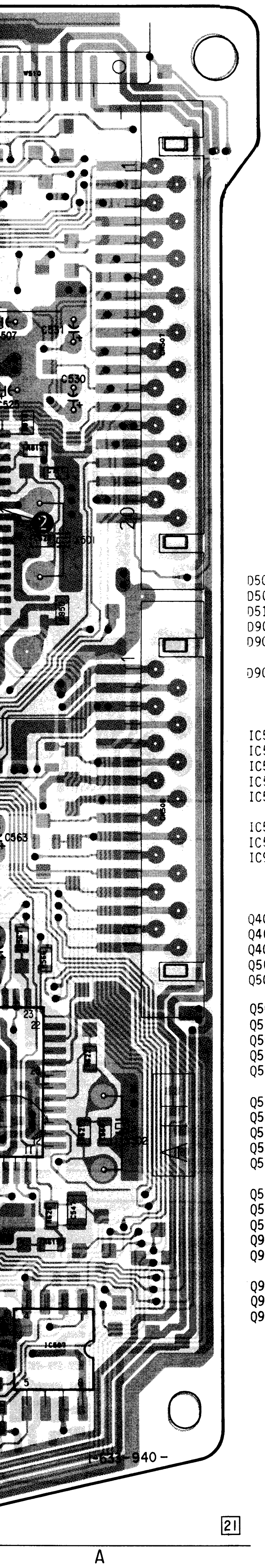
D501	8-719-941-86	DI
D506	8-719-941-86	DI
D510	8-719-404-46	DI
D901	8-719-938-75	DI
D902	8-719-938-75	DI
D903	8-719-938-78	DI

IC

IC501	8-752-815-89	IC
IC502	8-759-148-05	IC
IC503	8-759-990-55	IC
IC504	8-759-805-06	IC
IC506	8-752-035-48	IC
IC507	8-759-030-03	IC
IC508	8-759-748-65	IC
IC901	8-759-500-42	IC

TRANSI

Q400	8-729-905-35	TR
Q401	8-729-905-35	TR
Q402	8-729-905-35	TR
Q502	8-729-905-35	TR
Q503	8-729-905-23	TR
Q505	8-729-905-35	TR
Q506	8-729-905-23	TR
Q507	8-729-905-35	TR
Q508	8-729-905-23	TR
Q509	8-729-905-35	TR
Q510	8-729-905-35	TR
Q511	8-729-905-23	TR
Q512	8-729-907-00	TR
Q513	8-729-905-35	TR
Q514	8-729-905-35	TR
Q515	8-729-905-18	TR
Q516	8-729-905-18	TR
Q540	8-729-822-48	TR
Q901	8-729-805-25	TR
Q902	8-729-805-25	TR
Q903	8-729-805-25	TR
Q904	8-729-820-43	TR
Q905	8-729-905-35	TR


C531
C530
C563
1-633-940-
21
A

DIODE

D501	8-719-941-86	DIODE DAN202U
D506	8-719-941-86	DIODE DAN202U
D510	8-719-404-46	DIODE MA110
D901	8-719-938-75	DIODE SB05-05CP
D902	8-719-938-75	DIODE SB05-05CP
D903	8-719-938-78	DIODE SB10-05PCP

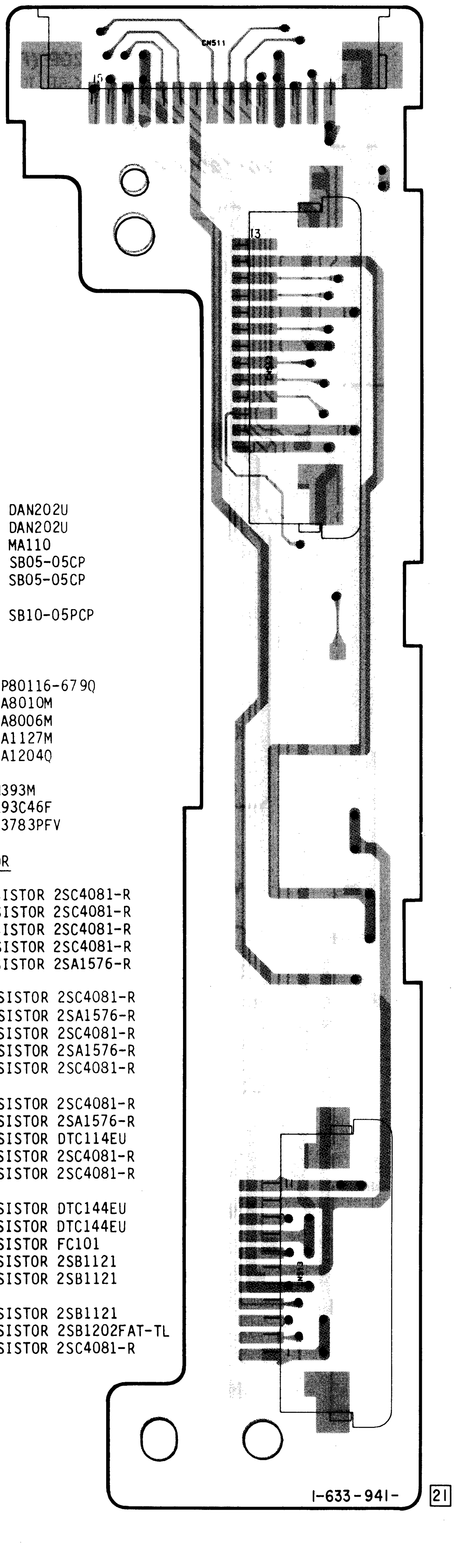
IC

IC501	8-752-815-89	IC CXP80116-679Q
IC502	8-759-148-05	IC CXA8010M
IC503	8-759-990-55	IC CXA8006M
IC504	8-759-805-06	IC CXA1127M
IC506	8-752-035-48	IC CXA1204Q
IC507	8-759-030-03	IC LM393M
IC508	8-759-748-65	IC BR93C46F
IC901	8-759-500-42	IC MB3783PFV

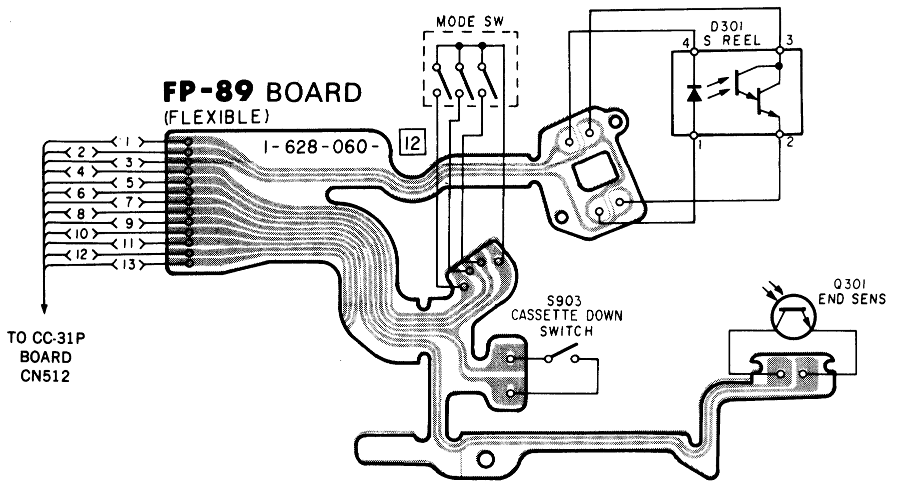
TRANSISTOR

Q400	8-729-905-35	TRANSISTOR 2SC4081-R
Q401	8-729-905-35	TRANSISTOR 2SC4081-R
Q402	8-729-905-35	TRANSISTOR 2SC4081-R
Q502	8-729-905-35	TRANSISTOR 2SC4081-R
Q503	8-729-905-23	TRANSISTOR 2SA1576-R
Q505	8-729-905-35	TRANSISTOR 2SC4081-R
Q506	8-729-905-23	TRANSISTOR 2SA1576-R
Q507	8-729-905-35	TRANSISTOR 2SC4081-R
Q508	8-729-905-23	TRANSISTOR 2SA1576-R
Q509	8-729-905-35	TRANSISTOR 2SC4081-R
Q510	8-729-905-35	TRANSISTOR 2SC4081-R
Q511	8-729-905-23	TRANSISTOR 2SA1576-R
Q512	8-729-907-00	TRANSISTOR DTC114EU
Q513	8-729-905-35	TRANSISTOR 2SC4081-R
Q514	8-729-905-35	TRANSISTOR 2SC4081-R
Q515	8-729-905-18	TRANSISTOR DTC144EU
Q516	8-729-905-18	TRANSISTOR DTC144EU
Q540	8-729-822-48	TRANSISTOR FC101
Q901	8-729-805-25	TRANSISTOR 2SB1121
Q902	8-729-805-25	TRANSISTOR 2SB1121
Q903	8-729-805-25	TRANSISTOR 2SB1121
Q904	8-729-820-43	TRANSISTOR 2SB1202FAT-TL
Q905	8-729-905-35	TRANSISTOR 2SC4081-R

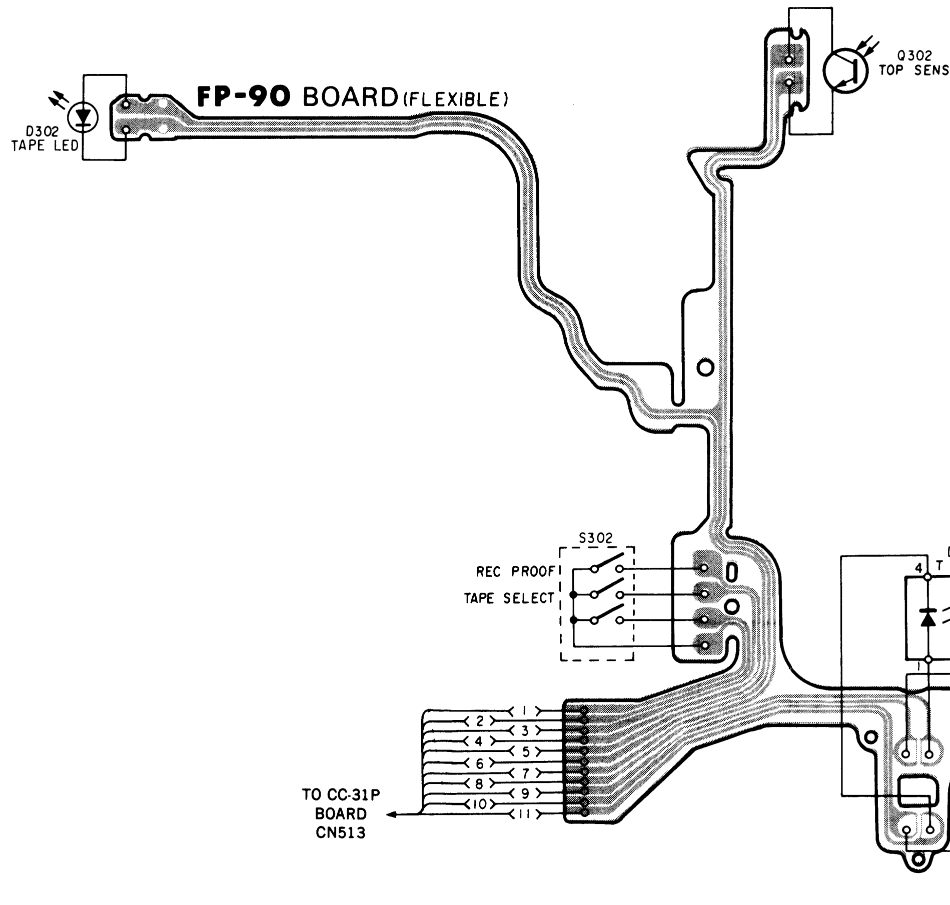
CC-31P BOARD (COMPONENT SIDE)

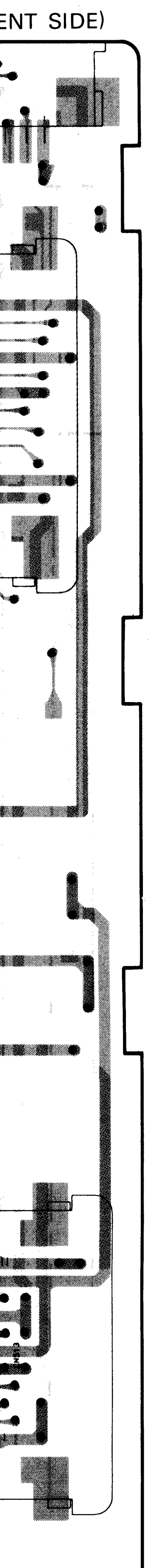

CN511
15
13
1-633-941-
21

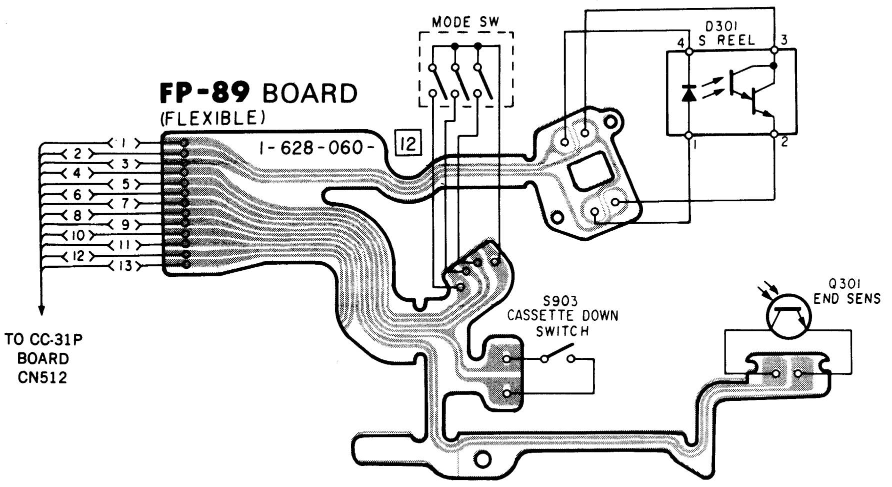
FP-89 BOARD (FLEXIBLE)

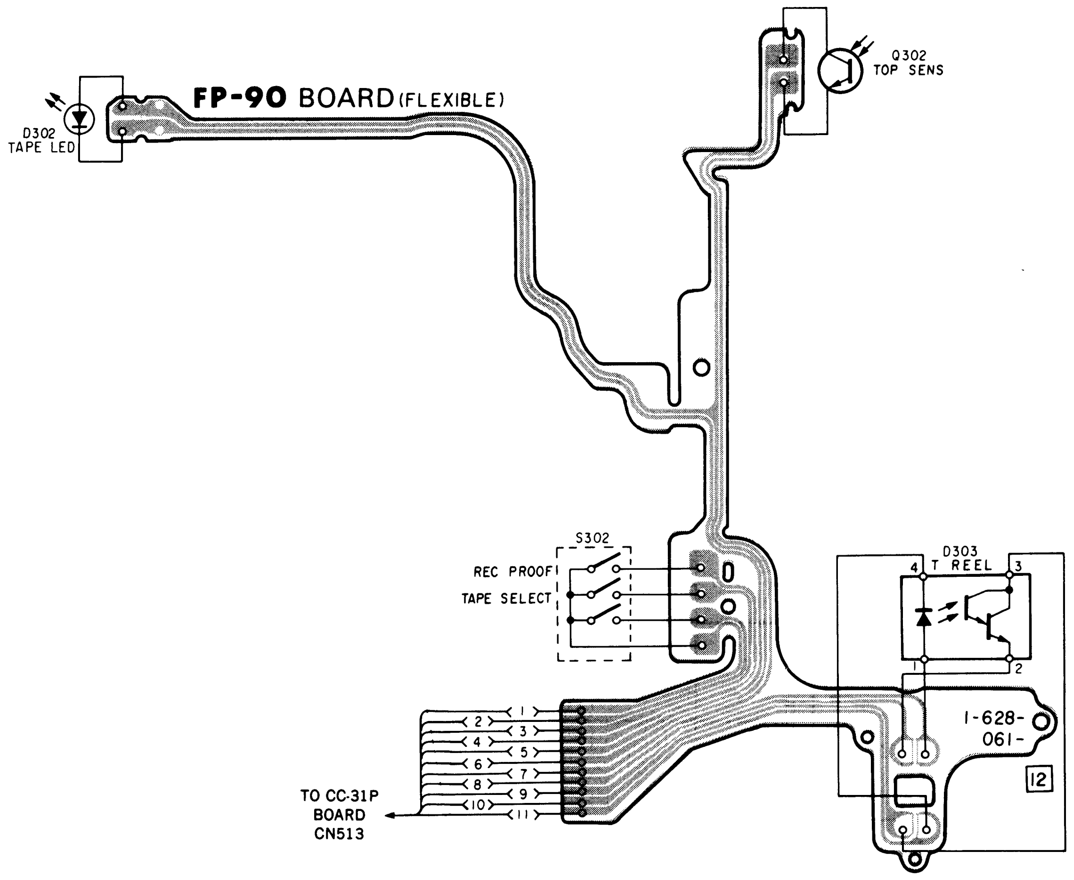

MODE SW
D301
S REEL
4
3
1
2
1-628-060-
12
1
2
3
4
5
6
7
8
9
10
11
12
13
TO CC-31P BOARD CN512
S903
CASSETTE DOWN SWITCH
Q301
END SENS

FP-90 BOARD (FLEXIBLE)

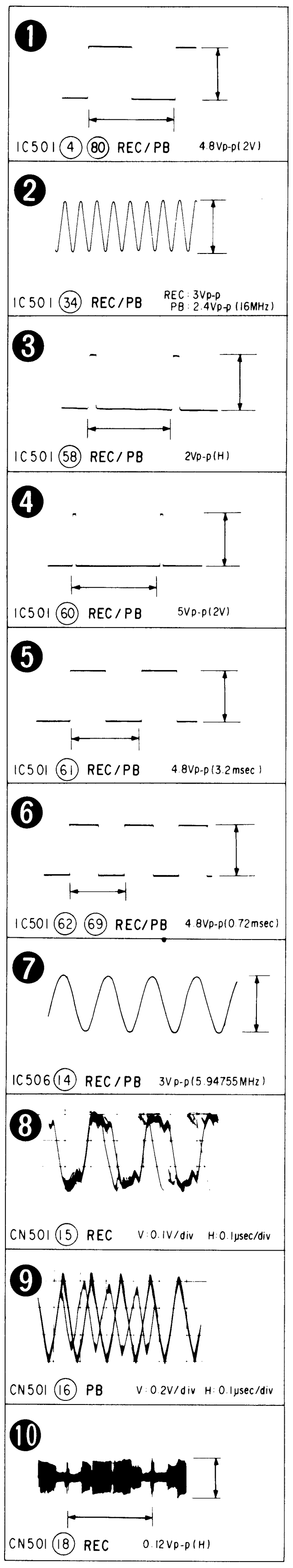

D302
TAPE LED
Q302
TOP SENS
S302
REC PROOF
TAPE SELECT
1
2
3
4
5
6
7
8
9
10
11
TO CC-31P BOARD CN513


ENT SIDE)
1-633-941-
21

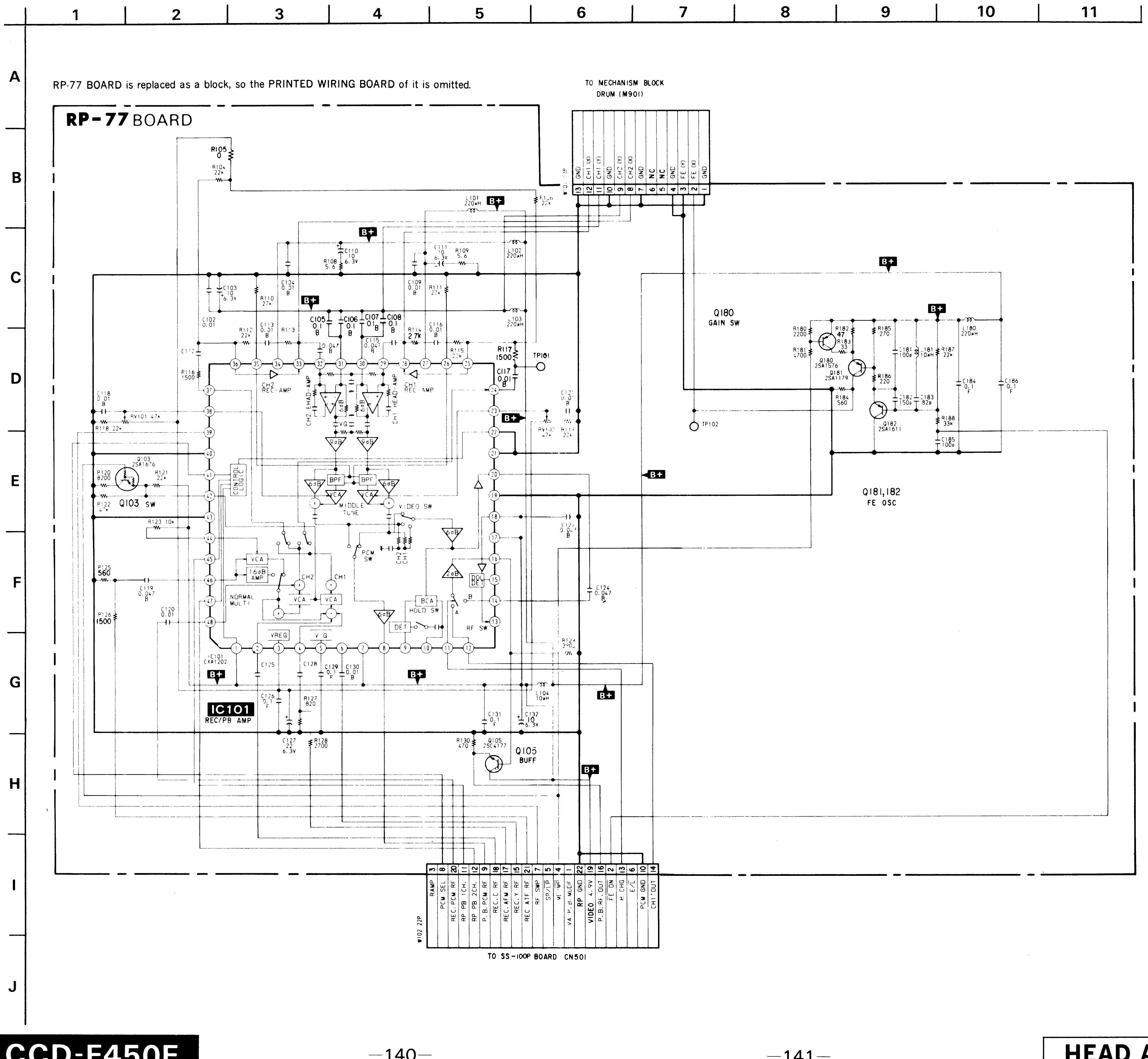

FP-89 BOARD
(FLEXIBLE)
1-628-060-
12
MODE SW
D301
S REEL
4
3
1
2
S903
CASSETTE DOWN
SWITCH
Q301
END SENS
1
2
3
4
5
6
7
8
9
10
11
12
13
TO CC-31P
BOARD
CN512


FP-90 BOARD(FLEXIBLE)
D302
TAPE LED
Q302
TOP SENS
S302
REC PROOF
TAPE SELECT
D303
T REEL
4
3
1
2
1-628-
061-
12
1
2
3
4
5
6
7
8
9
10
11
TO CC-31P
BOARD
CN513

SS-100P BOARD



RP-77 (HEAD AMP) SCHEMATIC DIAGRAM


1
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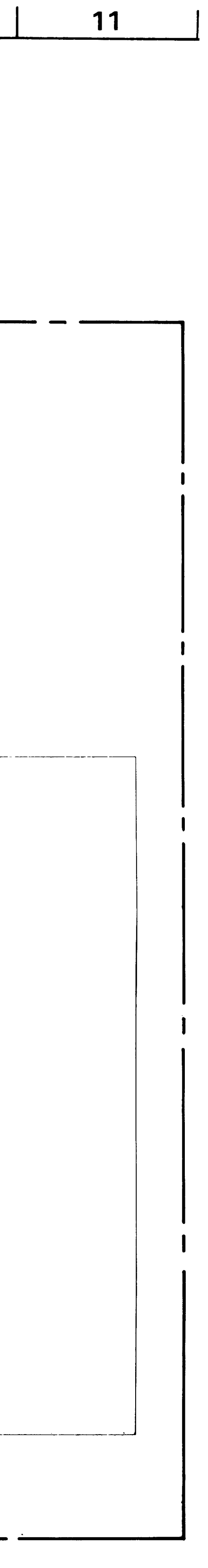
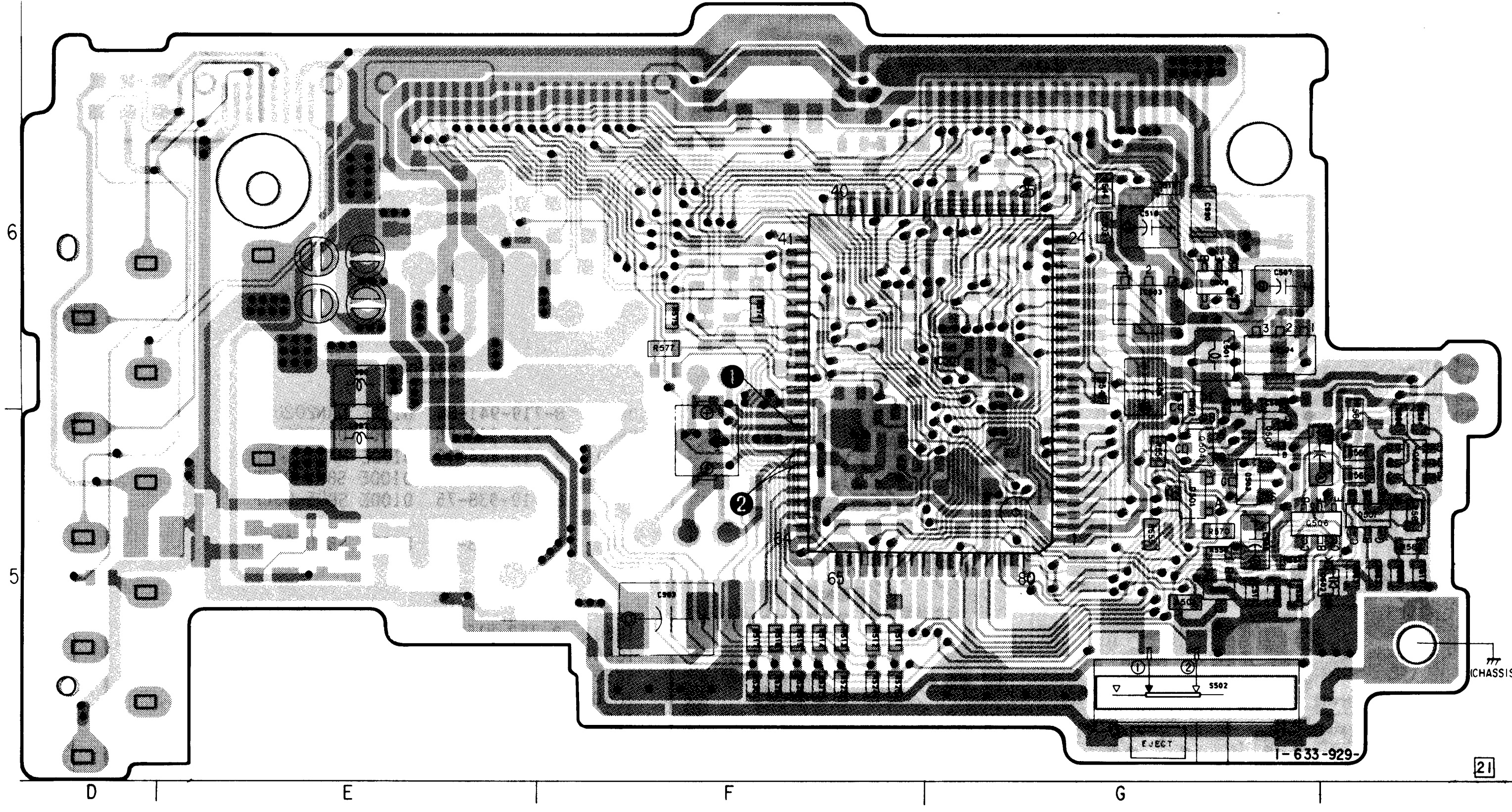
10
11
A
B
C
D
E
F
G
H
I
J
RP-77 BOARD is replaced as a block, so the PRINTED WIRING BOARD of it is omitted.
RP-77 BOARD
TO MECHANISM BLOCK
DRUM (M901)
13 GND
12 CH1 (X)
11 CH1 (Y)
10 GND
9 CH2 (Y)
8 CH2 (X)
7 GND
6 NC
5 NC
4 GND
3 FE (Y)
2 FE (X)
1 GND
R105 0
R104 22k
L101 220μH
L102 220μH
L103 220μH
R106 22k
B+
C110 10 6.3V
R108 5.6
C111 10 6.3V
R109 5.6
C103 10 6.3V
R110 27k
C104 0.01 B
C109 0.01 B
R111 27k
C102 0.01
R112 22k
C113 0.01 B
R113
C105 0.1 B
C106 0.1 B
C107 0.1 B
C108 0.1 B
R114 2.7k
C116 0.01 B
C115 0.047 B
R115 22k
R117 1500
TP101
C117 0.01 B
R116 1500
CH2 REC-AMP
CH2 HEAD-AMP
CH1 HEAD AMP
CH1 REC AMP
VG
C118 0.01 B
RV101 47k
R118 22k
RV102 47k
R119 22k
Q103 2SA1576
R120 8200
R121 22k
R122 22k
Q103 SW
R123 10k
CONTROL LOGIC
BPF
VCA
MIDDLE TONE
VIDEO SW
PCM SW
C121 0.047 B
R125 560
C119 0.047 B
VCA
16dB AMP
NORMAL MULTI
CH2
CH1
BCA HOLD SW
DET
RF SW
DOL DE
C124 0.047
R126 1500
C120 0.01
VREG
V G
R129 3900
IC101 CXA1202
C125
C128
C129 0.1 F
C130 0.01 B
C126 0.1 F
R127 820
L104 10μH
IC101
REC/PB AMP
C131 0.1 F
C132 10 6.3V
C127 22 6.3V
R128 2700
R130 470
Q105 2SC4177
Q105 BUFF
Q180 GAIN SW
R180 2200
R181 4700
R182 47
R183 33
R185 270
C181 100p
L181 10μH
R187 22k
L180 220μH
Q180 2SA1576
Q181 2SA1179
R186 220
R184 560
C182 150p
C183 82p
C184 0.1 F
C186 0.1 F
TP102
Q182 2SA1611
R188 33k
C185 100p
Q181,182 FE OSC
W101 13P
W102 22P
3 RAMP
8 PCM SEL
20 REC.PCM RF
11 RP PB 1CH.
12 RP PB 2CH.
9 P.B.PCM RF
18 REC.C RF
17 REC.AFM RF
15 REC.Y RF
21 REC ATF RF
7 RF SWP
5 SP/LP
4 VE/VP
1 VA P.B.MODE
22 RP GND
19 VIDEO 4.9V
16 P.B.RF.OUT
2 FE ON
13 H.CHG
6 E/L
10 PCM GND
14 CH1 OUT
TO SS-100P BOARD CN501

CK-40P, DK-6P, ED-20P (FUNCTION SWITCH), FU-72P (MODE CONTROL), LI-18P (LITHIUM BATTERY), RM-23P (REMOTE CONTROL RECEIVER), VK-10P (FUNCTI

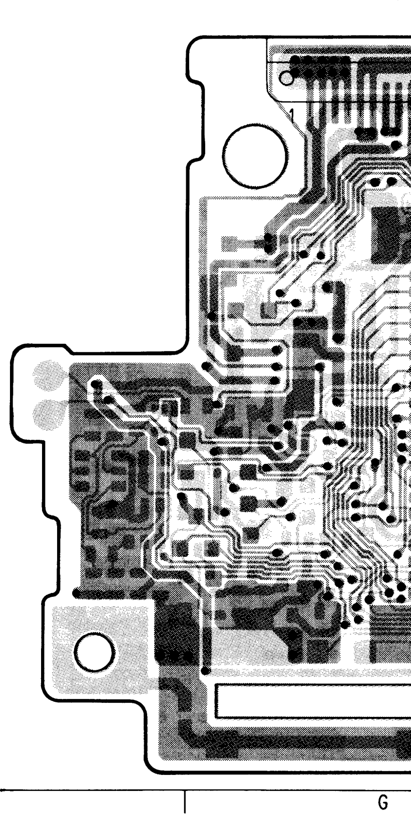
—Ref. No. CK-40P, DK-6P, ED-20P BOARDS : 5000 series, FU-72P BOARD : 6000 series, LI-18P, RM-23P, VK-10P, ZK-10P BOARDS : 7000 series—



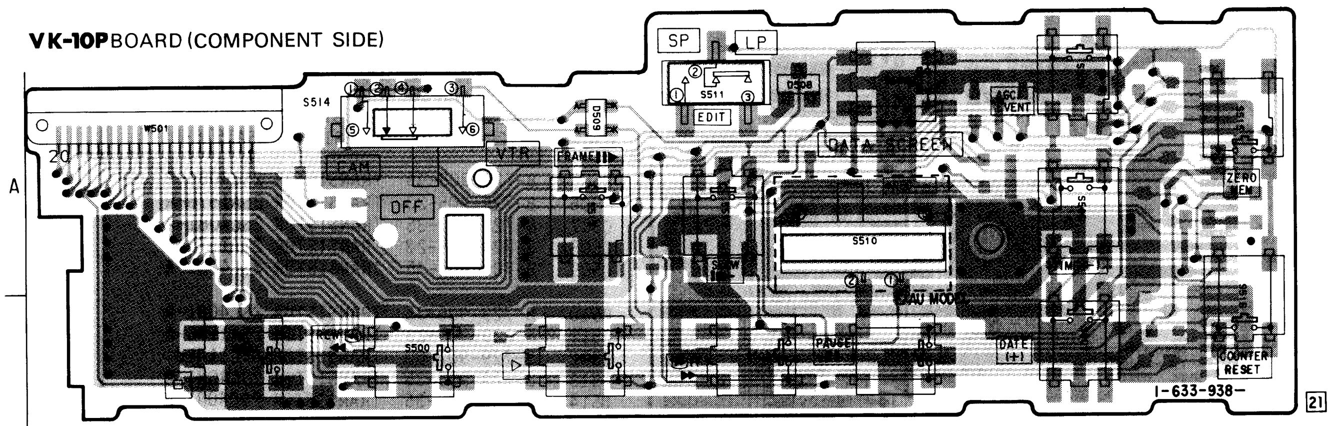
FU-72P BOARD (COMPONENT SIDE)


6
5
40
41
65
80
24
R577
C903
S502
EJECT
(CHASSIS)
1-633-929-
21
D
E
F
G
H

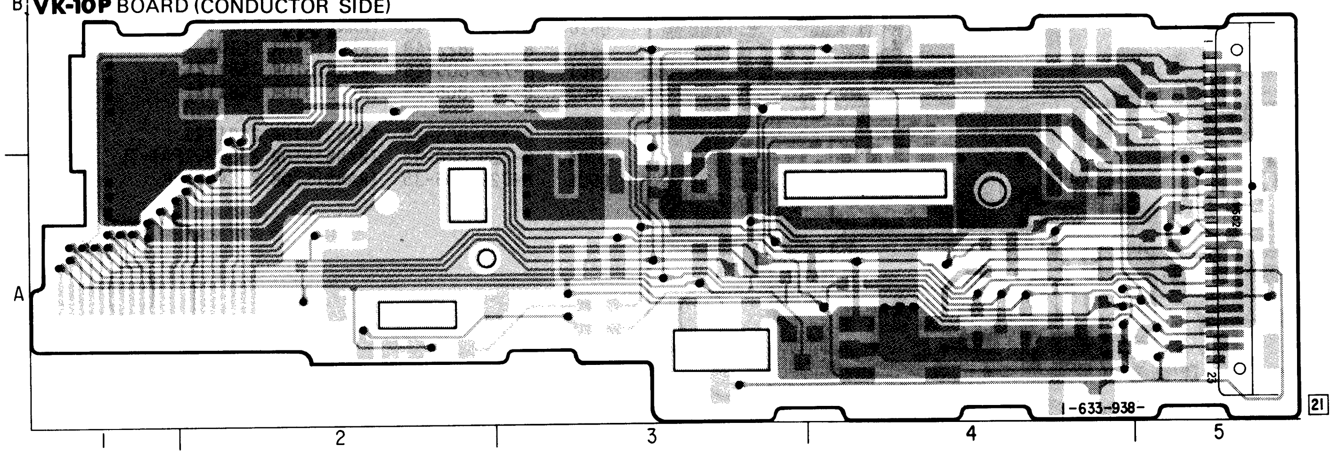
FU-72P BOARD (CONDUCTOR SIDE)



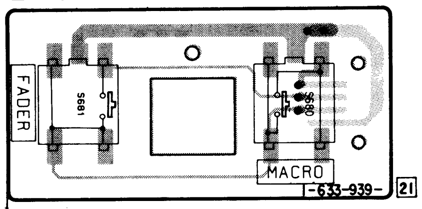
VK-10P BOARD (COMPONENT SIDE)


SP
LP
S511
EDIT
D508
D509
S514
W501
20
A
CAM
VTR
OFF
FRAME
DATA SCREEN
S510
DUAL MODE
PAUSE
DATE (+)
ZERO MEM
COUNTER RESET
S500
1-633-938-
21

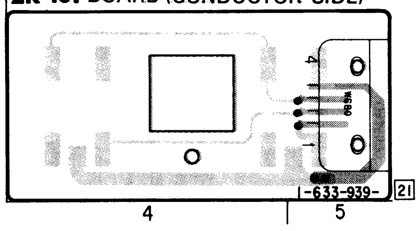
B **VK-10P** BOARD (CONDUCTOR SIDE)


A
1-633-938-
21
1
2
3
4
5

ZK-10P BOARD (COMPONENT SIDE)


FADER
S681
S680
MACRO
1-633-939-
21

F **ZK-10P** BOARD (CONDUCTOR SIDE)


4
1
1-633-939-
21
4
5

DIODE

D508	8-719-420-34	DIODE MA151K
D509	8-719-940-45	DIODE MA159

DIODE

D501	8-719-938-75	DIODE SB05-05CP
D502	8-719-404-46	DIODE MA110
D503	8-719-404-46	DIODE MA110
D504	8-719-404-46	DIODE MA110
D505	8-719-404-46	DIODE MA110
D511	8-719-404-46	DIODE MA110

IC

IC501	8-759-150-92	IC UPD75316GF-064-3B9
IC503	8-759-937-54	IC S-81250HG-RD-S
IC504	8-759-946-03	IC S-8054ALR-LN-S

TRANSISTOR

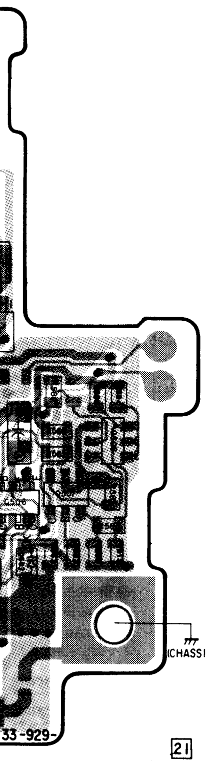
Q502	8-729-905-23	TRANSISTOR 2SA1576-R
Q503	8-729-109-44	TRANSISTOR 2SK94
Q504	8-729-905-18	TRANSISTOR DTC144EU
Q505	8-729-905-35	TRANSISTOR 2SC4081-R
Q506	8-729-402-78	TRANSISTOR XN6401
Q507	8-729-402-19	TRANSISTOR XN6501
Q508	8-729-402-78	TRANSISTOR XN6401
Q509	8-729-904-20	TRANSISTOR FMA2
Q579	8-729-905-12	TRANSISTOR DTA144EU
Q991	8-729-905-35	TRANSISTOR 2SC4081-R

IC950 8-759-145-

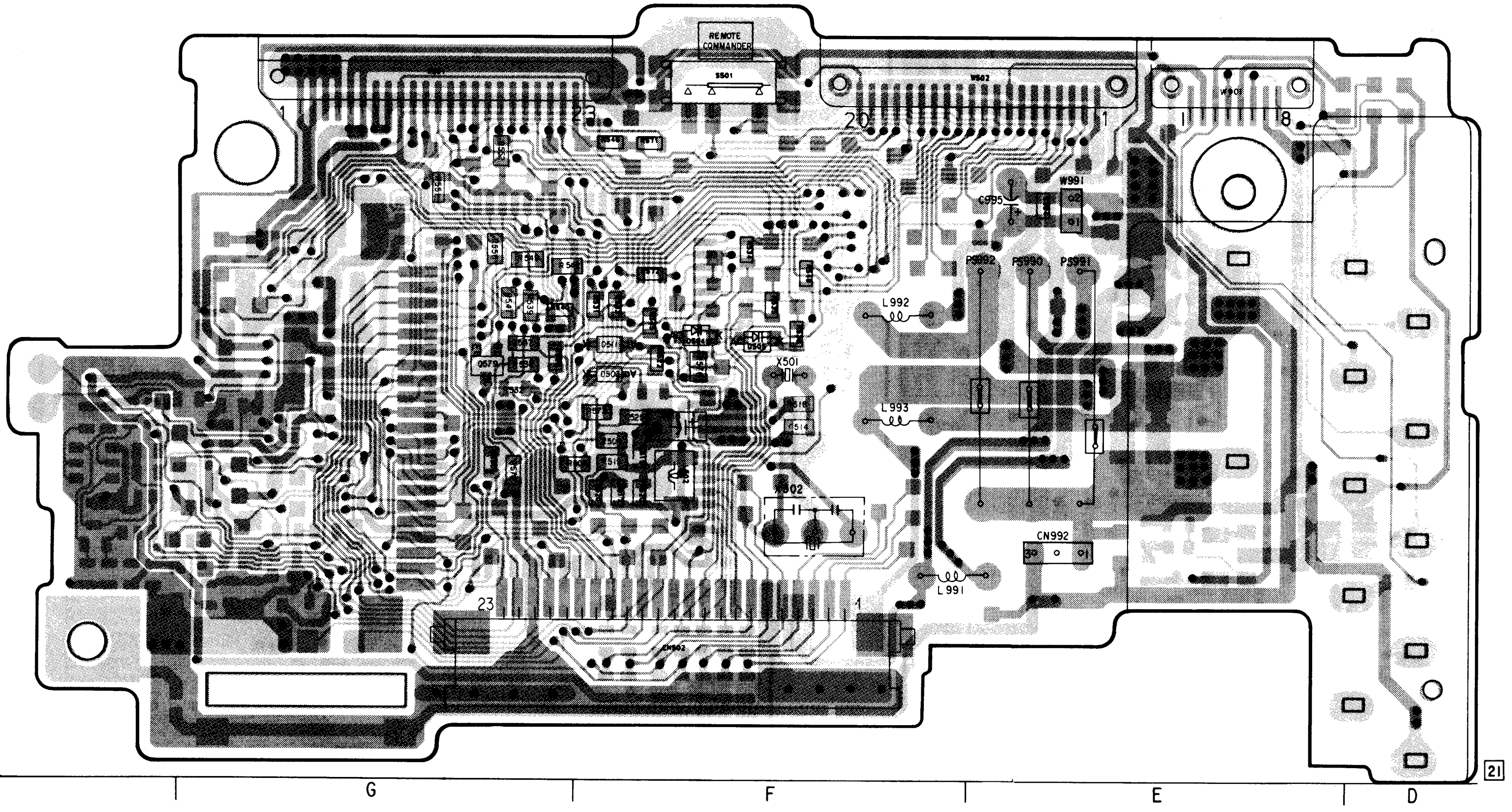
Q950 8-729-901-

23P (REMOTE CONTROL RECEIVER), VK-10P (FUNCTION SWITCH), ZK-10P (SWITCH) PRINTED WIRING BOARDS

0P BOARDS : 7000 series—

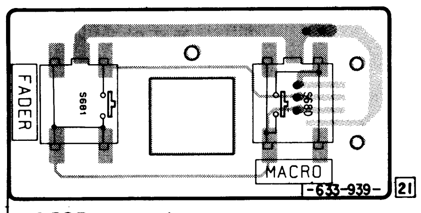

(CHASSIS)
33-929-
21

FU-72P BOARD (CONDUCTOR SIDE)

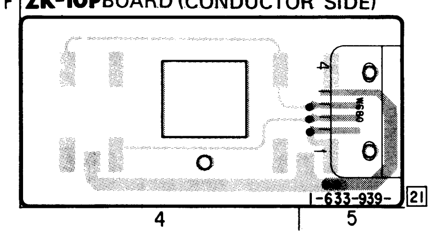

REMOTE COMMANDER
S501
W902
W901
W991
PS992
PS990
PS991
L992
L993
X501
CN992
L991
CN902
1
20
1
8
23
1
21
H
G
F
E
D

DK-6P
C
D
E
DK-6P B
D
C

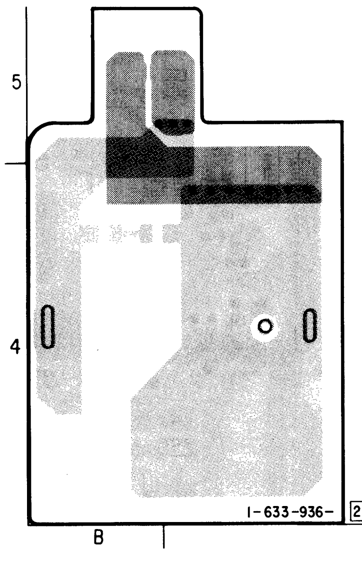
ZK-10P BOARD (COMPONENT SIDE)


FADER
S881
S882
MACRO
1-633-939-
21

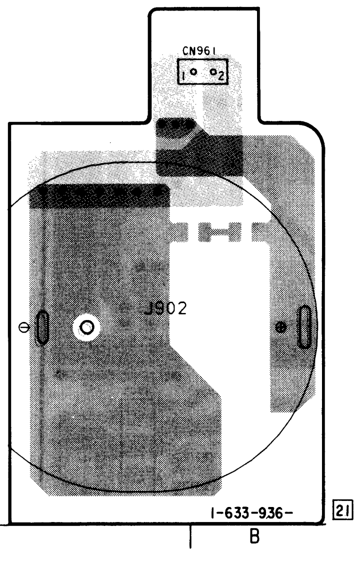
ZK-10P BOARD (CONDUCTOR SIDE)


F
4
1-633-939-
21
4
5

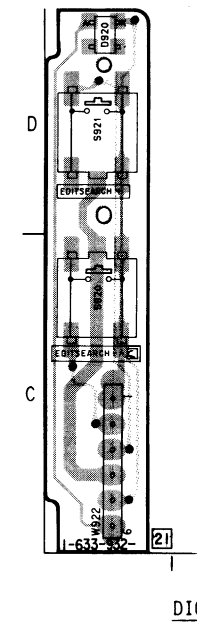
LI-18P BOARD (COMPONENT SIDE)


5
4
1-633-936-
21
B
C

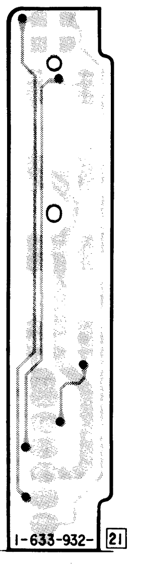
LI-18P BOARD (CONDUCTOR SIDE)


CN961
1 2
J902
1-633-936-
21
B

ED-20P BOARD (COMPONENT SIDE)

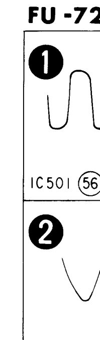

D920
S921
EDIT SEARCH
S922
EDIT SEARCH
W922
D
C
1-633-932-
21

ED-20P BOARD (CONDUCTOR SIDE)



DIODE

D920 8-719-941-34 DIODE GL1HD51



DIODE

D501	8-719-938-75	DIODE SB05-05CP
D502	8-719-404-46	DIODE MA110
D503	8-719-404-46	DIODE MA110
D504	8-719-404-46	DIODE MA110
D505	8-719-404-46	DIODE MA110
D511	8-719-404-46	DIODE MA110

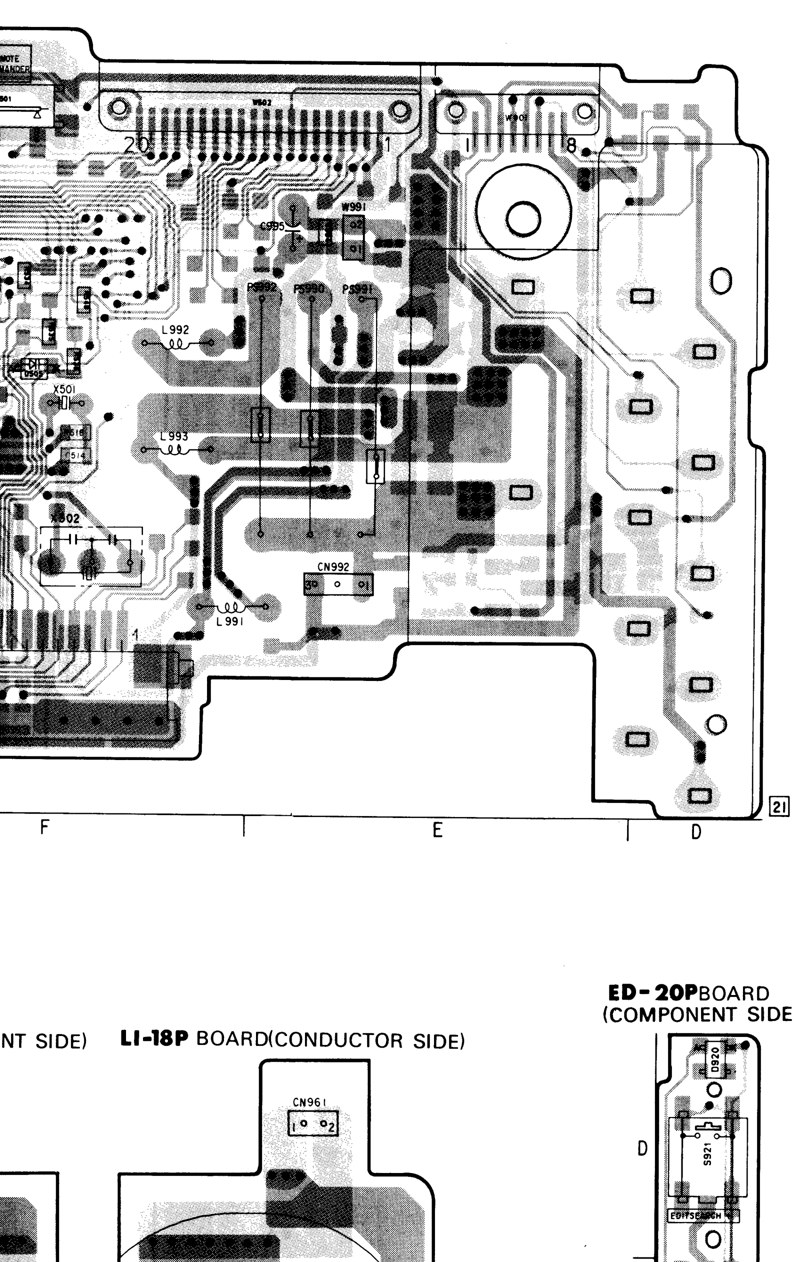
IC

IC501	8-759-150-92	IC UPD75316GF-064-3B9
IC503	8-759-937-54	IC S-81250HG-RD-S
IC504	8-759-946-03	IC S-8054ALR-LN-S

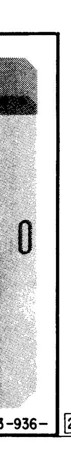
TRANSISTOR

Q502	8-729-905-23	TRANSISTOR 2SA1576-R
Q503	8-729-109-44	TRANSISTOR 2SK94
Q504	8-729-905-18	TRANSISTOR DTC144EU
Q505	8-729-905-35	TRANSISTOR 2SC4081-R
Q506	8-729-402-78	TRANSISTOR XN6401
Q507	8-729-402-19	TRANSISTOR XN6501
Q508	8-729-402-78	TRANSISTOR XN6401
Q509	8-729-904-20	TRANSISTOR FMA2
Q579	8-729-905-12	TRANSISTOR DTA144EU
Q991	8-729-905-35	TRANSISTOR 2SC4081-R

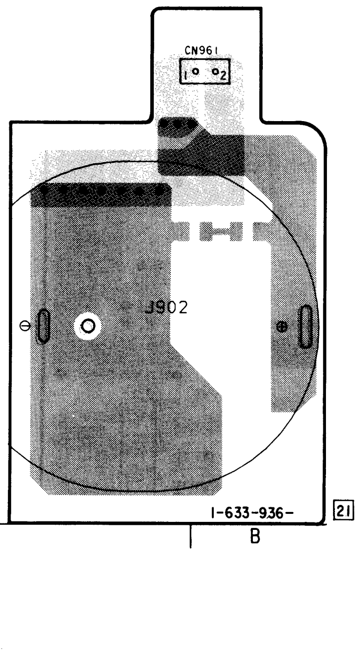
TCH) PRINTED WIRING BOARDS


W502
20
1
W991
C995
W901
1
8
PS992
PS990
PS991
L992
X501
L993
X502
CN992
L991
1
21
F
E
D

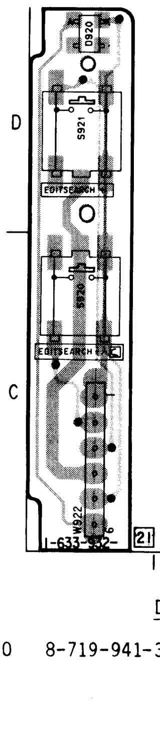
NT SIDE)



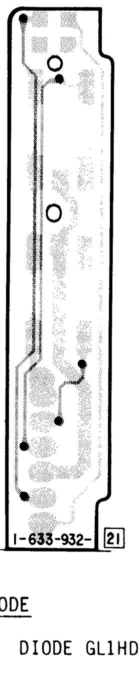
LI-18P BOARD(CONDUCTOR SIDE)


CN961
1
2
J902
1-633-936-
21
B

ED-20PBOARD
(COMPONENT SIDE)


D
D920
S921
EDIT SEARCH
S920
EDIT SEARCH
C
W922
1-633-932-
21

ED-20PBOARD
(CONDUCTOR SIDE)



DIODE

D920	8-719-941-34	DIODE GL1HD51

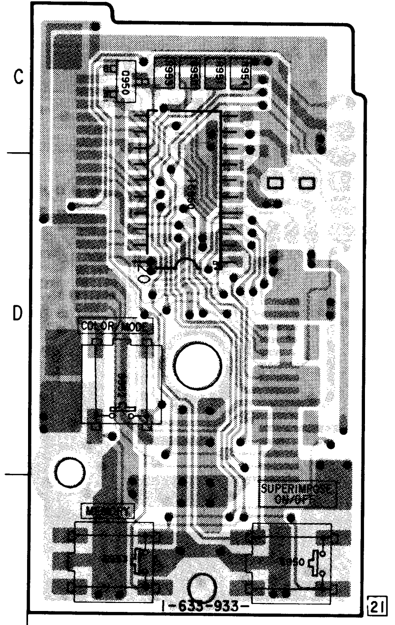
IC

IC950	8-759-145-63	IC UPD7564G-540

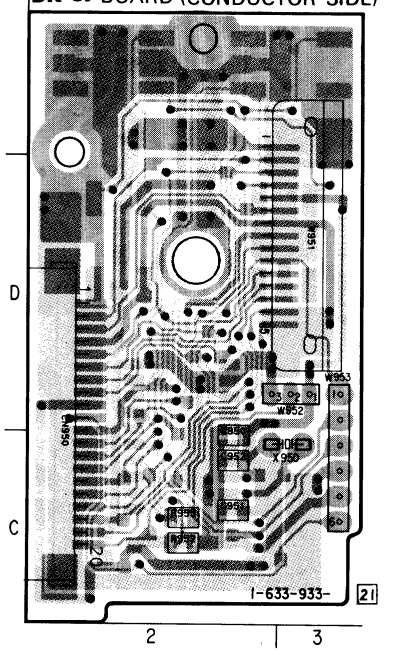
TRANSISTOR

Q950	8-729-901-01	TRANSISTOR DTC144EK

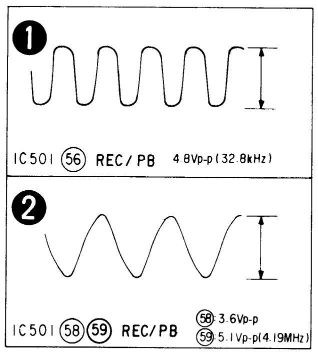
DK-6P BOARD (COMPONENT SIDE)


C
D
Q950
S955
S956
S954
COLOR/MODE
MEMORY
SUPERIMPOSE ON/OFF
1-633-933-
21
E

DK-6P BOARD (CONDUCTOR SIDE)


D
C
IC950
X950
W952
W953
1-633-933-
21
2
3

FU -72P BOARD


❶
IC501 (56) REC/PB 4.8Vp-p(32.8kHz)
❷
IC501 (58)(59) REC/PB
(58): 3.6Vp-p
(59): 5.1Vp-p(4.19MHz)

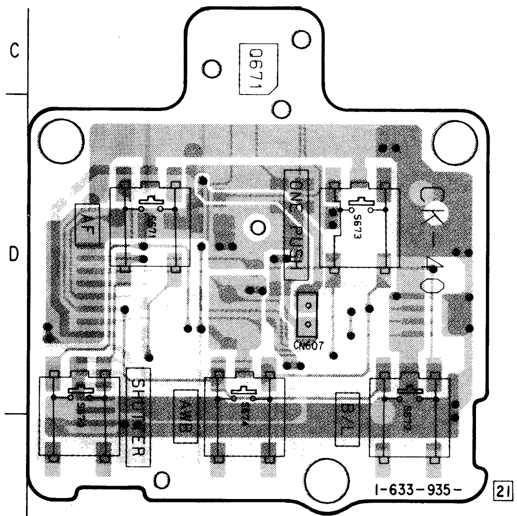
DIODE

D670	8-719-420-36	DIODE MA151A
D671	8-719-940-45	DIODE MA159

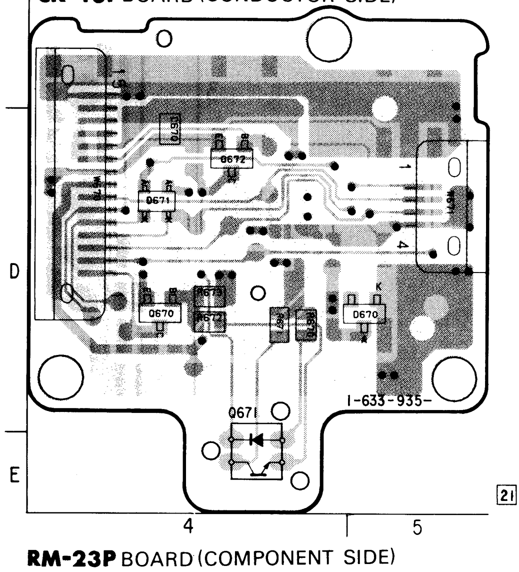
TRANSISTOR

Q670	8-729-120-12	TRANSISTOR 2SC1623
Q671	8-719-939-11	TRANSISTOR GP2S09-B
Q672	8-729-805-61	TRANSISTOR 2SC3395-TB

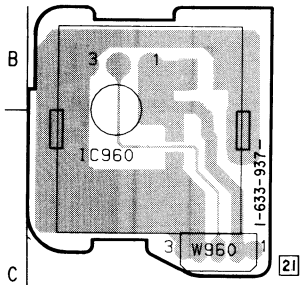
CK-40P BOARD (COMPONENT SIDE)


C
D
D671
AF
ONE PUSH
CK
CN607
SHUTTER
AWB
B/L
1-633-935-
21

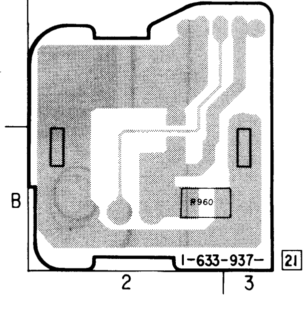
CK-40P BOARD (CONDUCTOR SIDE)


E
D
E
Q672
Q671
Q670
D670
4
1
Q671
1-633-935-
21
4
5

RM-23P BOARD (COMPONENT SIDE)


B
C
3
1
IC960
1-633-937-
3
W960
1
21

RM-23P BOARD (CONDUCTOR SIDE)

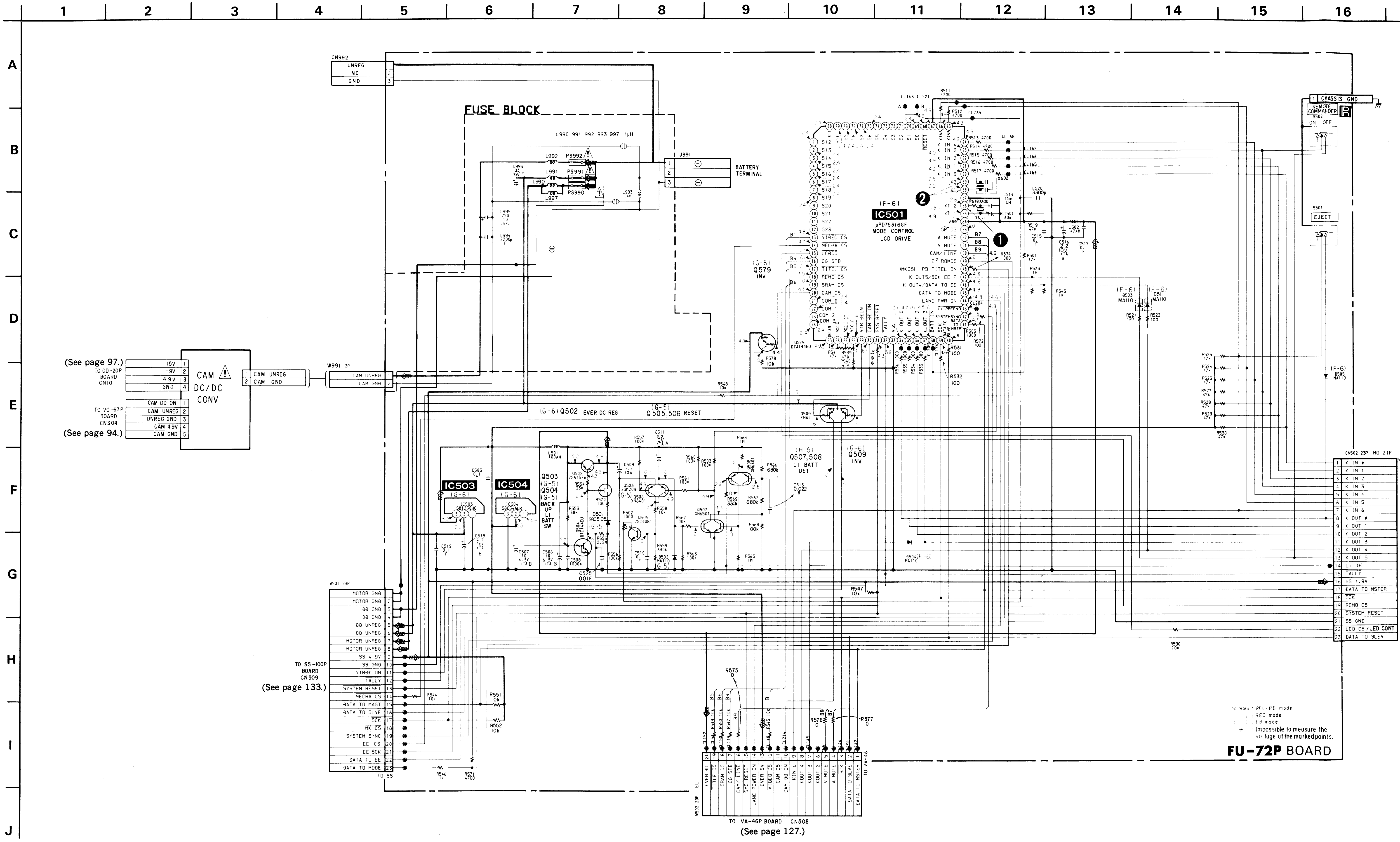

B
W960
1-633-937-
21
2
3

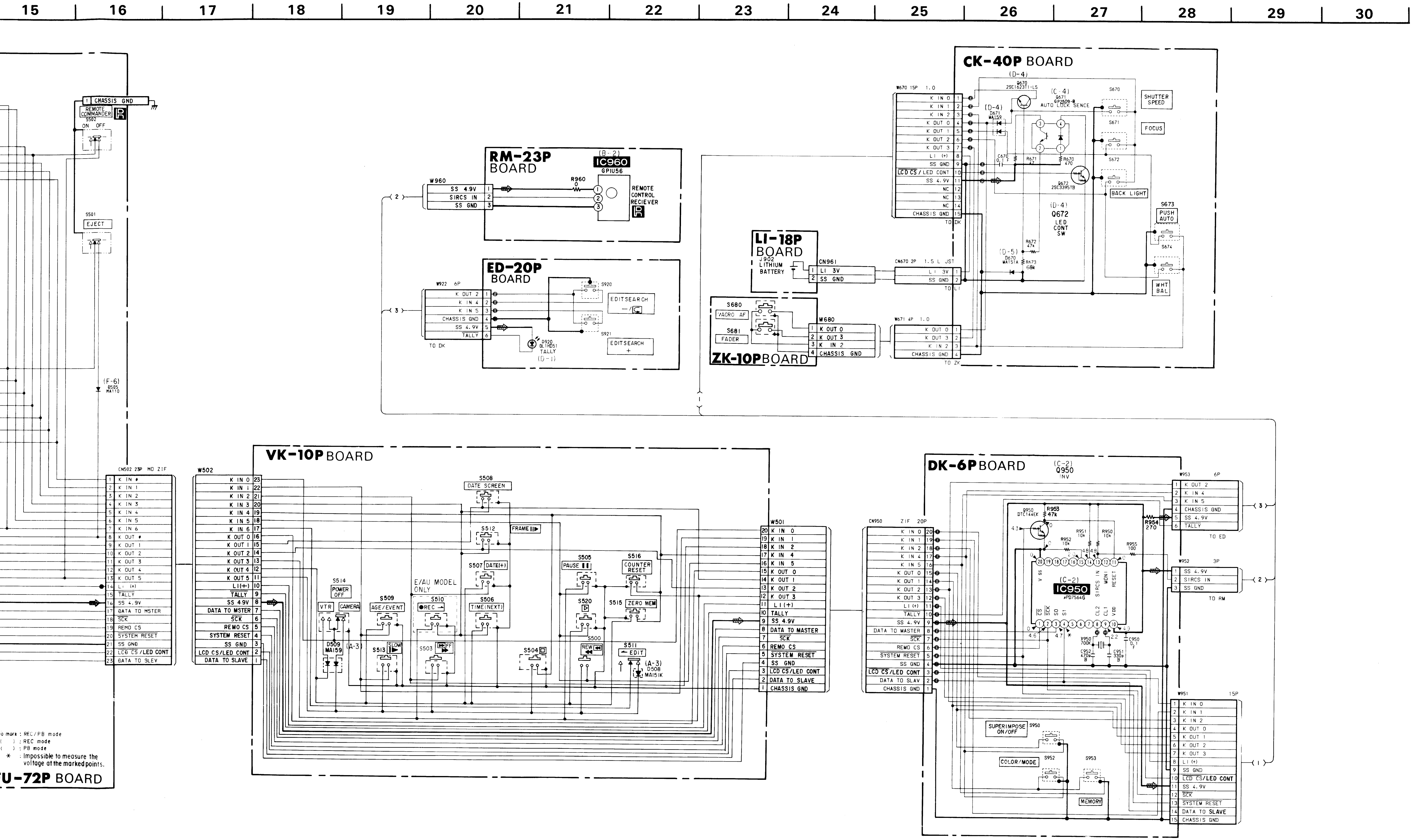
IC

IC960	8-749-921-76	IC GP1U56

CK-40P, DK-6P, ED-20P (FUNCTION SWITCH), FU-72P (MODE CONTROL), LI-18P (LITHIUM BATTERY), RM-23P (REMOTE CONTROL RECEIVER), VK-10P (FUNCTION SWITCH), ZK-10P (SWITCH) SCHEMATIC DIAGRAM

—Ref. No. CK-40P, DK-6P, ED-20P BOARDS : 5000 series, FU-72P BOARD : 6000 series, LI-18P, RM-23P, VK-10P, ZK-10P BOARDS : 7000 series—


1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
A
B
C
D
E
F
G
H
I
J
CN992
UNREG
NC
GND
FUSE BLOCK
L990 991 992 993 997 1μH
L992
PS992
L991
PS991
L990
PS990
L997
L993
J991
BATTERY TERMINAL
(See page 97.)
TO CD-20P BOARD CN101
15V
-9V
4.9V
GND
TO VC-67P BOARD CN304
CAM DD ON
CAM UNREG
UNREG GND
CAM 4.9V
CAM GND
(See page 94.)
CAM DC/DC CONV
CAM UNREG
CAM GND
W991 2P
(F-6)
IC501
μPD75316GF
MODE CONTROL
LCD DRIVE
(G-6)
Q579
INV
(G-6) Q502 EVER DC REG
(G-5)
Q505,506 RESET
IC503
(G-6)
IC504
(G-6)
Q503 (G-5)
Q504 (G-5)
BACK UP LI BATT SW
(H-5)
Q507,508
LI BATT DET
(G-6)
Q509
INV
W501 23P
MOTOR GND
MOTOR GND
DD GND
DD GND
DD UNREG
DD UNREG
MOTOR UNREG
MOTOR UNREG
SS 4.9V
SS GND
VTRDD ON
TALLY
SYSTEM RESET
MECHA CS
DATA TO MAST
DATA TO SLVE
SCK
MK CS
SYSTEM SYNC
EE CS
EE SCK
DATA TO EE
DATA TO MODE
TO SS
TO SS-100P BOARD CN509
(See page 133.)
W502 20P
EVER DC
TITLE CS
SRAM CS
CG STB
CAM/LINE
SYS RESET
LANC POWER ON
EVER 5V
VIDEO CS
CAM CS
CAM DD ON
KIN 6
KOUT 4
KOUT 3
KOUT 2
V MUTE
A MUTE
SCK
DATA TO SLVE
DATA TO MSTER
TO VA-46
TO VA-46P BOARD CN508
(See page 127.)
1 CHASSIS GND
REMOTE COMMANDER
S502
ON OFF
S501
EJECT
CN502 23P MD Z1F
K IN 0
K IN 1
K IN 2
K IN 3
K IN 4
K IN 5
K IN 6
K OUT 0
K OUT 1
K OUT 2
K OUT 3
K OUT 4
K OUT 5
LI (+)
TALLY
SS 4.9V
DATA TO MSTER
SCK
REMO CS
SYSTEM RESET
SS GND
LCD CS/LED CONT
DATA TO SLEV
no mark : REC/PB mode
[ ] : REC mode
( ) : PB mode
* : Impossible to measure the voltage at the marked points.
FU-72P BOARD

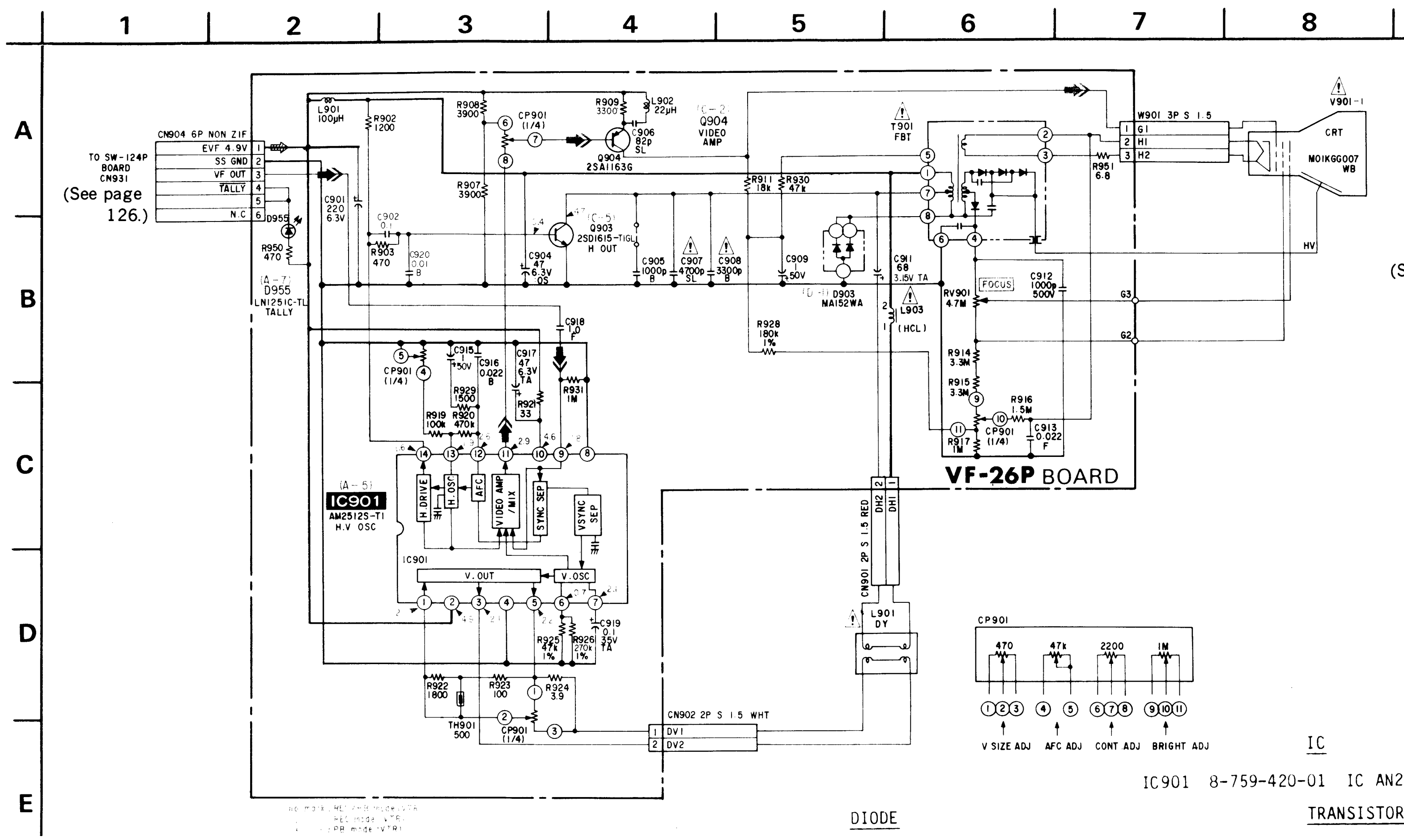

15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
CK-40P BOARD
SHUTTER SPEED
FOCUS
BACK LIGHT
PUSH AUTO
WHT BAL
AUTO LOCK SENCE
Q670 2SC1623TI-L5
Q671 GP2S09-B
Q672 2SC3395TB
LED CONT SW
W670 15P
CN670 2P
W671 4P
TO DK
TO LI
TO ZK
RM-23P BOARD
IC960 GP1U56
REMOTE CONTROL RECIEVER
W960
SS 4.9V
SIRCS IN
SS GND
R960
ED-20P BOARD
W922 6P
EDITSEARCH −
EDITSEARCH +
S920
S921
D920 SLI-H051 TALLY
TO DK
LI-18P BOARD
J902 LITHIUM BATTERY
CN961
LI 3V
SS GND
ZK-10P BOARD
S680 MACRO AF
S681 FADER
W680
K OUT 0
K OUT 3
K IN 2
CHASSIS GND
CHASSIS GND
REMOTE COMMANDER
S502 ON OFF
S501 EJECT
D505 MA110
CN502 23P MD ZIF
W502
VK-10P BOARD
S508 DATE SCREEN
S512 FRAME
S507 DATE(+)
S506 TIME(NEXT)
S505 PAUSE
S516 COUNTER RESET
S515 ZERO MEM
S520
S500
S514 POWER OFF
S509 AGE/EVENT
S510 ●REC
E/AU MODEL ONLY
S513 SLOW
S503 FF
S504
S511 EDIT
REW
VTR
CAMERA
D509 MA159
D508 MA151K
W501
K IN 0
K IN 1
K IN 2
K IN 3
K IN 4
K IN 5
K IN 6
K OUT 0
K OUT 1
K OUT 2
K OUT 3
K OUT 4
K OUT 5
LI(+)
TALLY
SS 4.9V
DATA TO MASTER
SCK
REMO CS
SYSTEM RESET
SS GND
LCD CS/LED CONT
DATA TO SLAVE
CHASSIS GND
DK-6P BOARD
Q950 INV
Q950 DTC144EK
R953 47k
R954 270
IC950 μPD7564G
X950
CN950 ZIF 20P
W953 6P
TO ED
W952 3P
TO RM
W951 15P
SUPERIMPOSE ON/OFF
S950
COLOR/MODE
S952
S953
MEMORY
U-72P BOARD

no mark : REC/PB mode
( ) : REC mode
( ) : PB mode
* : Impossible to measure the voltage at the marked points.

no mark : REC/PB mode
( ) : REC mode
( ) : PB mode
* : Impossible to measure the voltage at the marked points.

VF-26P, VF-27P (VIEWFINDER) PRINTED WIRING BOARD AND SCHEMATIC DIAGRAM

—Ref. No. VF-26P BOARD: 8000 series, VF-27P BOARD: 9000 series


VF-26P BOARD
IC901 AM2512S-TI H.V OSC
TO SW-124P BOARD CN931 (See page 126.)
CN904 6P NON ZIF
CRT M01KGG007WB
V901-1
T901 FBT
Q903 2SD1615-T1GL H OUT
Q904 2SA1163G VIDEO AMP
D903 MA152WA
D955 LN1251C-TL TALLY
CN901 2P S 1.5 RED
CN902 2P S 1.5 WHT
L901 DY
W901 3P S 1.5
CP901
V SIZE ADJ
AFC ADJ
CONT ADJ
BRIGHT ADJ

IC

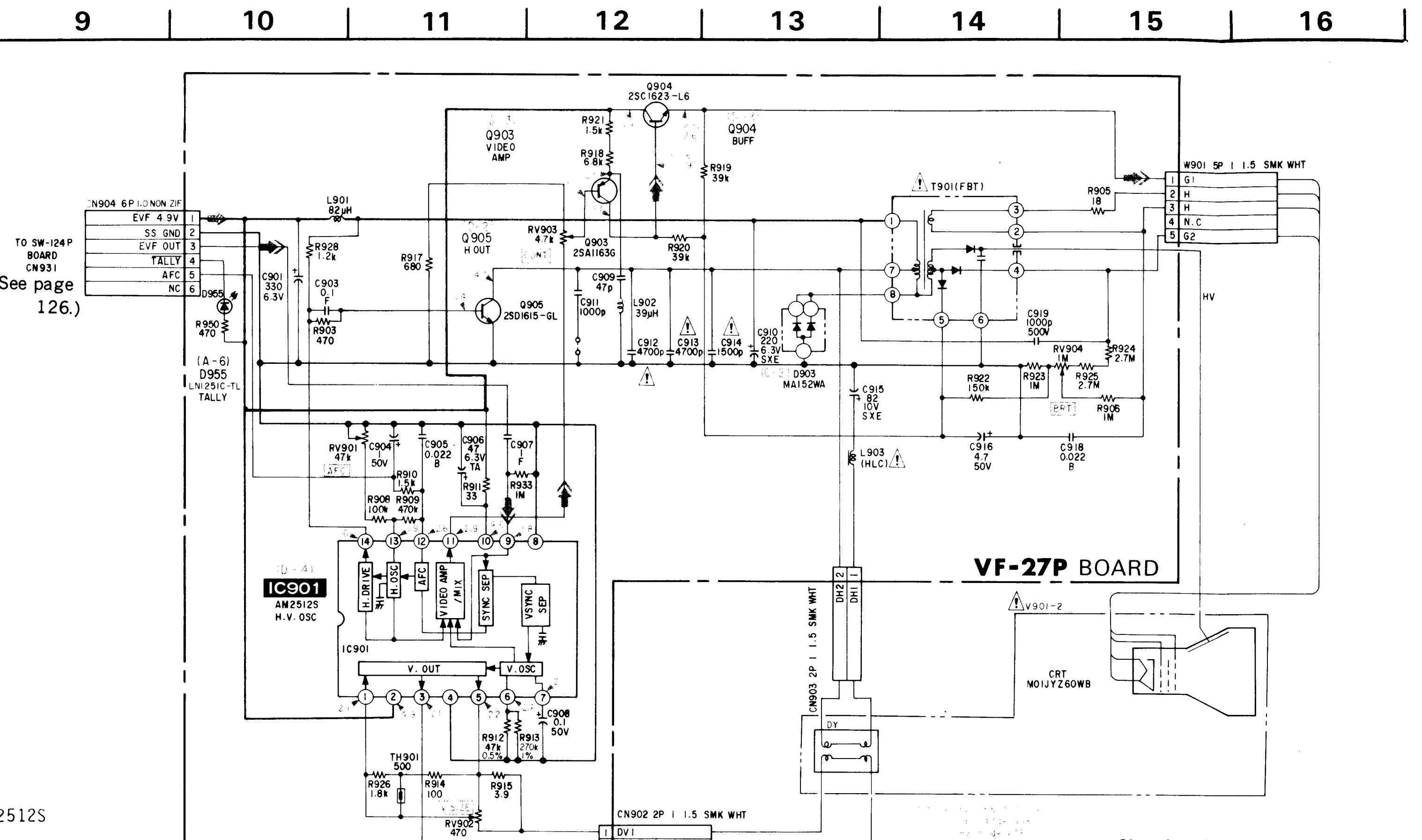
IC901 8-759-420-01 IC AN2512S

DIODE

D903 8-719-400-20 DIODE MA152WA
D955 8-719-404-21 DIODE LN1251C

TRANSISTOR

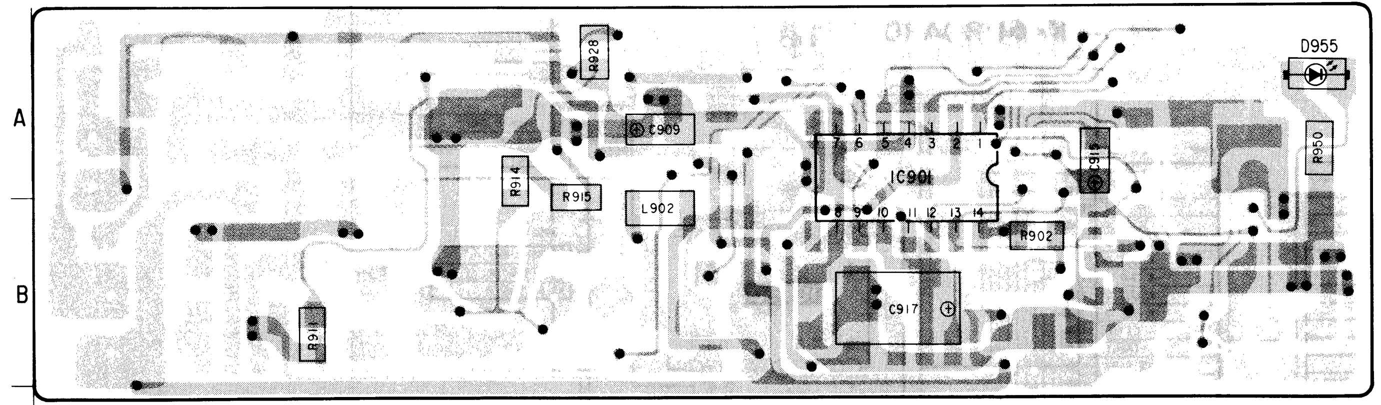
Q903 8-729-106-68 TRANSISTOR 2SD1615A-GP
Q904 8-729-216-31 TRANSISTOR 2SA1163G


VF-27P BOARD
IC901 AM2512S H.V. OSC
TO SW-124P BOARD CN931 (See page 126.)
CN904 6P NON ZIF
Q903 2SA1163G VIDEO AMP
Q904 2SC1623-L6 BUFF
Q905 2SD1615-GL H OUT
D903 MA152WA
D955 LN1251C-TL TALLY
T901 (FBT)
W901 5P 1 1.5 SMK WHT
CN903 2P 1 1.5 SMK WHT
CN902 2P 1 1.5 SMK WHT
CRT M01JYZ60WB
V901-2
DY

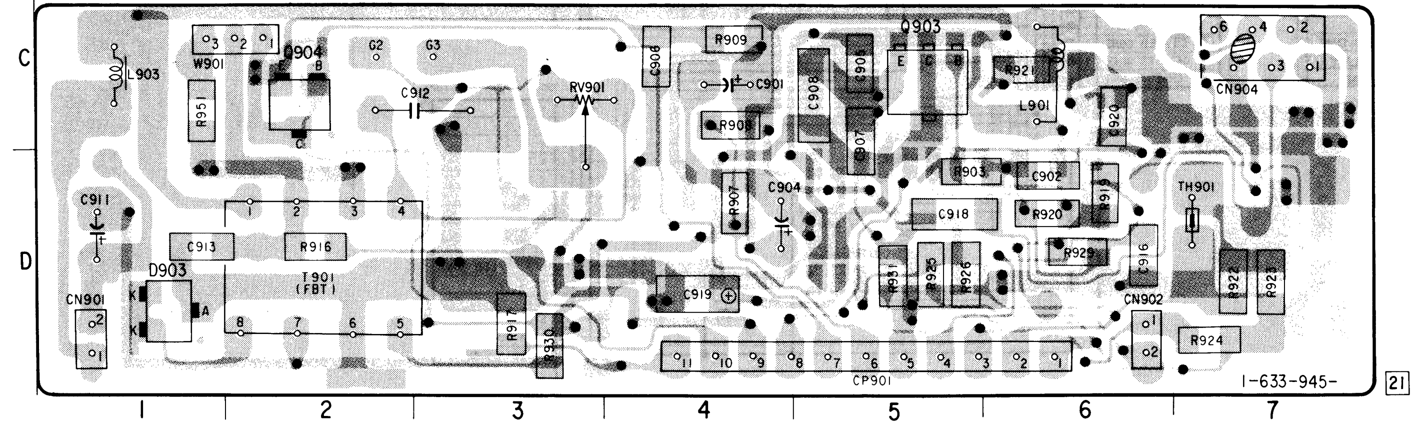
• Signal path

	VIDEO Signal		
	CHROMA	Y	Y/C
REC	➡	➡»	
PB	⇨	⇨»	

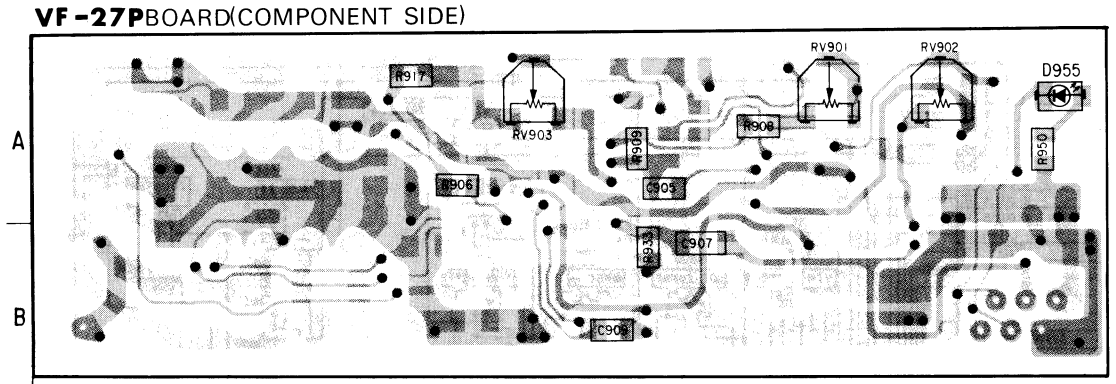
VF-26PBOARD(COMPONENT SIDE)


A
B
D955
C909
IC901
R914
R915
L902
R902
R950
R928
C917
R918

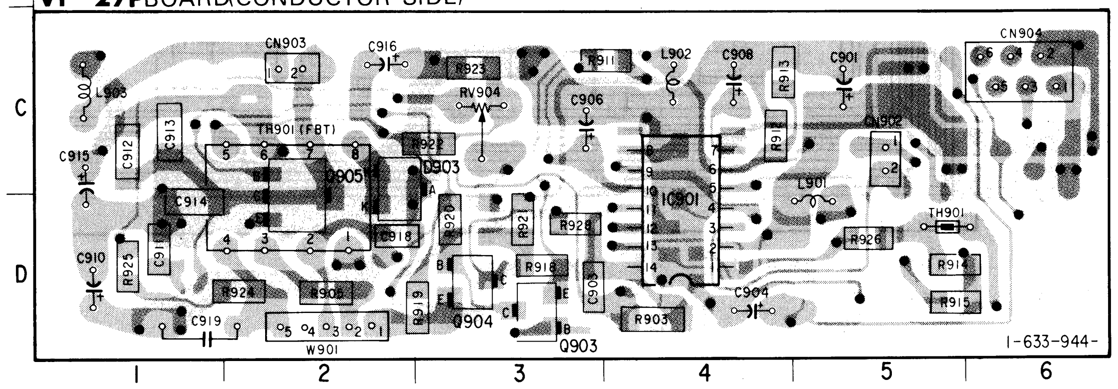
VF-26PBOARD(CONDUCTOR SIDE)


C
D
L903
W901
Q904
G2
G3
C912
RV901
Q903
R909
C901
L901
CN904
C911
C913
R916
T901 (FBT)
D903
CN901
C919
CN902
R924
CP901
TH901
1-633-945-
21
1
2
3
4
5
6
7

VF-27PBOARD(COMPONENT SIDE)


A
B
R917
RV903
RV901
RV902
D955
R906
R908
C905
C907
R950
C908

VF-27PBOARD(CONDUCTOR SIDE)


C
D
CN903
L903
C916
RV904
TR901 (FBT)
Q905
Q903
IC901
L901
L902
CN904
C910
C915
W901
Q904
TH901
1-633-944-
21
1
2
3
4
5
6

DIODE

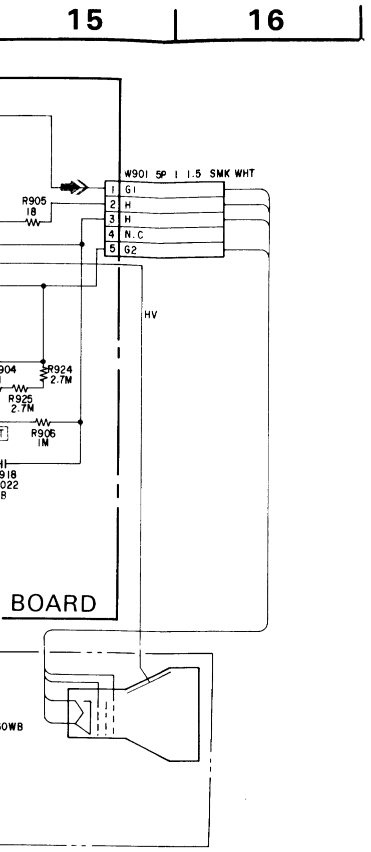
D903 8-719-400-20 DIODE MA152WA
D955 8-719-404-21 DIODE LN1251C

IC

IC901 8-759-420-01 IC AN2512S

TRANSISTOR

Q903 8-729-216-31 TRANSISTOR 2SA11
Q904 8-729-100-66 TRANSISTOR 2SC16
Q905 8-729-106-68 TRANSISTOR 2SD16


15
16
W901 5P 1 1.5 SMK WHT
1 G1
2 H
3 H
4 N.C
5 G2
R905
18
HV
R924
2.7M
R925
2.7M
R906
1M
BOARD

• Signal path

	VIDEO Signal		
	CHROMA	Y	Y/CHROMA
REC	➡	➠	⇛
PB	⇨	⇨	⇨

DIODE

03	8-719-400-20	DIODE MA152WA
55	8-719-404-21	DIODE LN1251C

IC

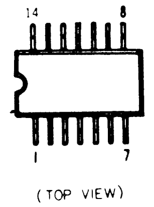
901	8-759-420-01	IC AN2512S

TRANSISTOR

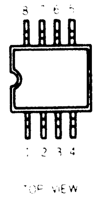
3	8-729-216-31	TRANSISTOR 2SA1163G
04	8-729-100-66	TRANSISTOR 2SC1623
05	8-729-106-68	TRANSISTOR 2SD1615A-GP

4-3. SEMICONDUCTORS

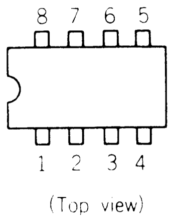
AN2512S
MC14066BF


14
8
1
7
(TOP VIEW)

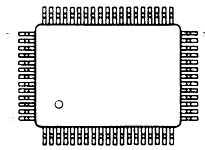
AK93C46F
LM393M


1 2 3 4
TOP VIEW

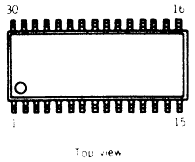
BR93C46F
NJM2233AM


8 7 6 5
1 2 3 4
(Top view)

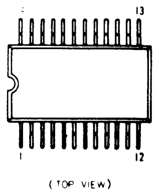
CF79028PG



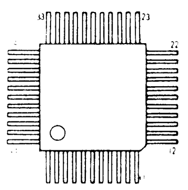
CXA1127M
CXA8006M


30
16
1
15
Top view

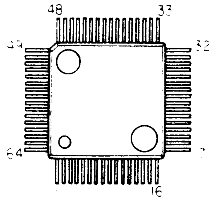
CXA1203N
CXA1393AN


13
1
12
(TOP VIEW)

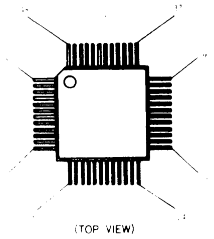
CXA1204Q
M51285BGP



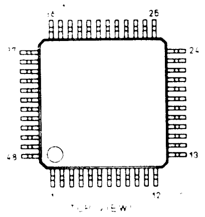
CXA1207R
CXD1205R


48
33
32
64
16

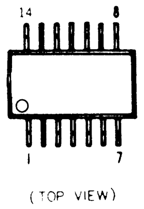
CXA1208R
MB3783PFV
MB673198U



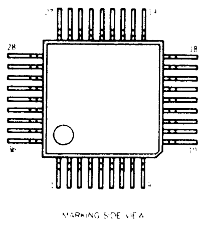
CXA1392R



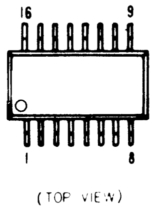
CXA8010M
LM324D
TL1596CDB


14
8
1
7
(TOP VIEW)

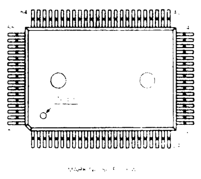
CXD1159Q


MARKING SIDE VIEW

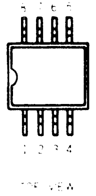
CXD1172AM
CXL1506M


16
9
1
8
(TOP VIEW)

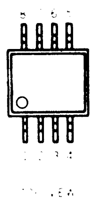
CXP80116-679Q
UPD75316GF-064-3B9



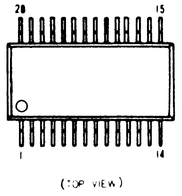
HA118070FP


1 2 3 4
TOP VIEW

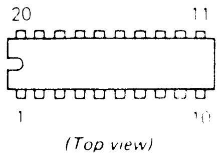
LA7293M-TE-L
LM358D
NJM2233BM
NJM2234M
NJM2235M
RC3414M



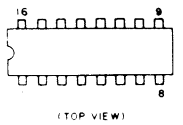
MB8464A-15LLPF


28
15
1
14
(TOP VIEW)

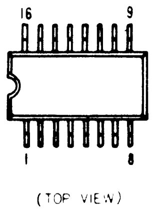
MB88341PFV


20
11
1
10
(Top view)

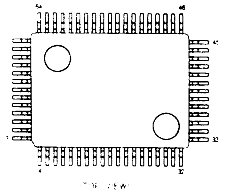
MC10H116M


16
9
8
(TOP VIEW)

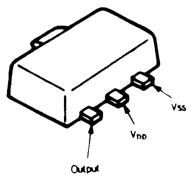
MC14028BF
MC14053BF


16
9
1
8
(TOP VIEW)

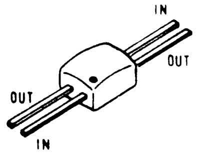
MC68HC11E9EFUSC400217



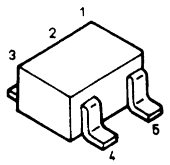
S-8054ALB-LM-S
S-8054ALR-LN-S


Vss
VDD
Output

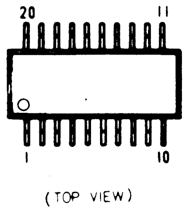
S-81250HG-RD-S


IN
OUT
OUT
IN

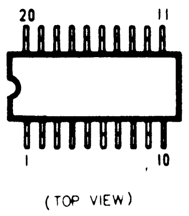
SC14S66F
TC7S08F



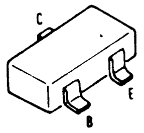
UPD6451G


20
11
1
10
(TOP VIEW)

UPD7564G-540


20
11
1
10
(TOP VIEW)

2SA1162
2SA1163G
2SA1576-R
2SB624-BV345
2SC1623
2SC2223-F13
2SC2223-T1F14
2SC3326N
2SC3395
2SC4081-R
DTC114TK
DTC144EK
DTC155EU
UN5212
UN5213
UN5215



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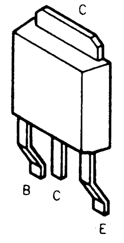
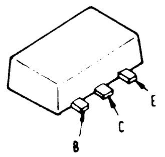
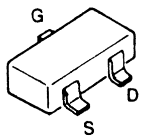


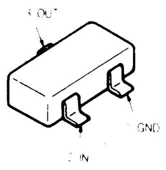
2SB1121
2SB798-DL
2SD1615A-GP
2SD874A-R



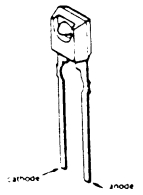
2SK300-3
2SK94



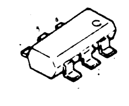
DTA144EU
DTA144TU
DTC114TU
DTC144EU
DTC144WU



EE-TP109

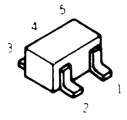

Cathode
Anode

FC101

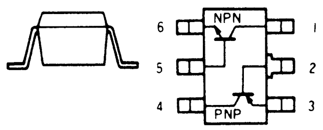


1 : 1E, 2 : 1B, 3 : 2C,
4 : 2E, 5 : 2B, 6 : 1C

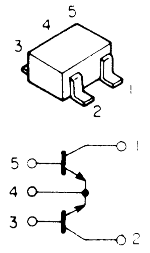
FMA2
FMG2



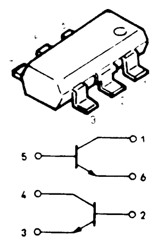
IMD2
XN4601


6
5
4
NPN
PNP
1
2
3

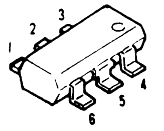
XN1214



XN4501

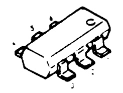


XN6213



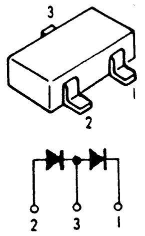
1 : 1C, 2 : 1B, 3 : 2C,
4 : 2B, 5 : 2E, 6 : 1E

XN6215
XN6401
XN6501

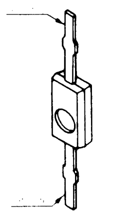


1 : 1C, 2 : 1B, 3 : 2C,
4 : 1E, 5 : 2E, 6 : 2B

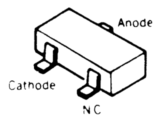
1SS123



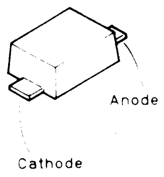
1T32



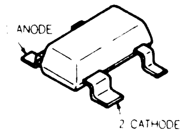
DAN202U


Anode
Cathode
NC

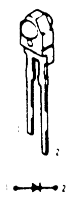
DTZ12


Anode
Cathode

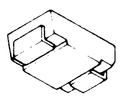
GL1HD51


ANODE
2 CATHODE

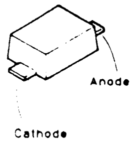
GL452S



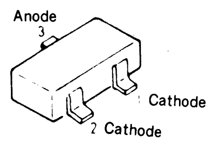
LN1251C



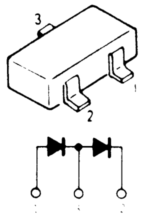
MA110


Anode
Cathode

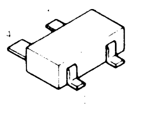
MA141WA
MA152WA


Anode
3
1 Cathode
2 Cathode

MA143

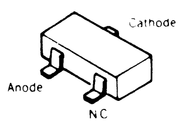


MA151A
MA159



1 : Cathode
2 : Cathode
3 : Anode
4 : Anode

MA151K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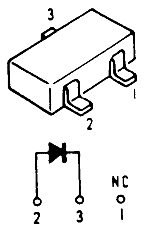
Anode
NC

SB05-05CP
RD9.1M-B1



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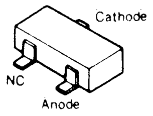
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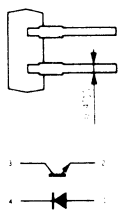
Anode

TLP907-0



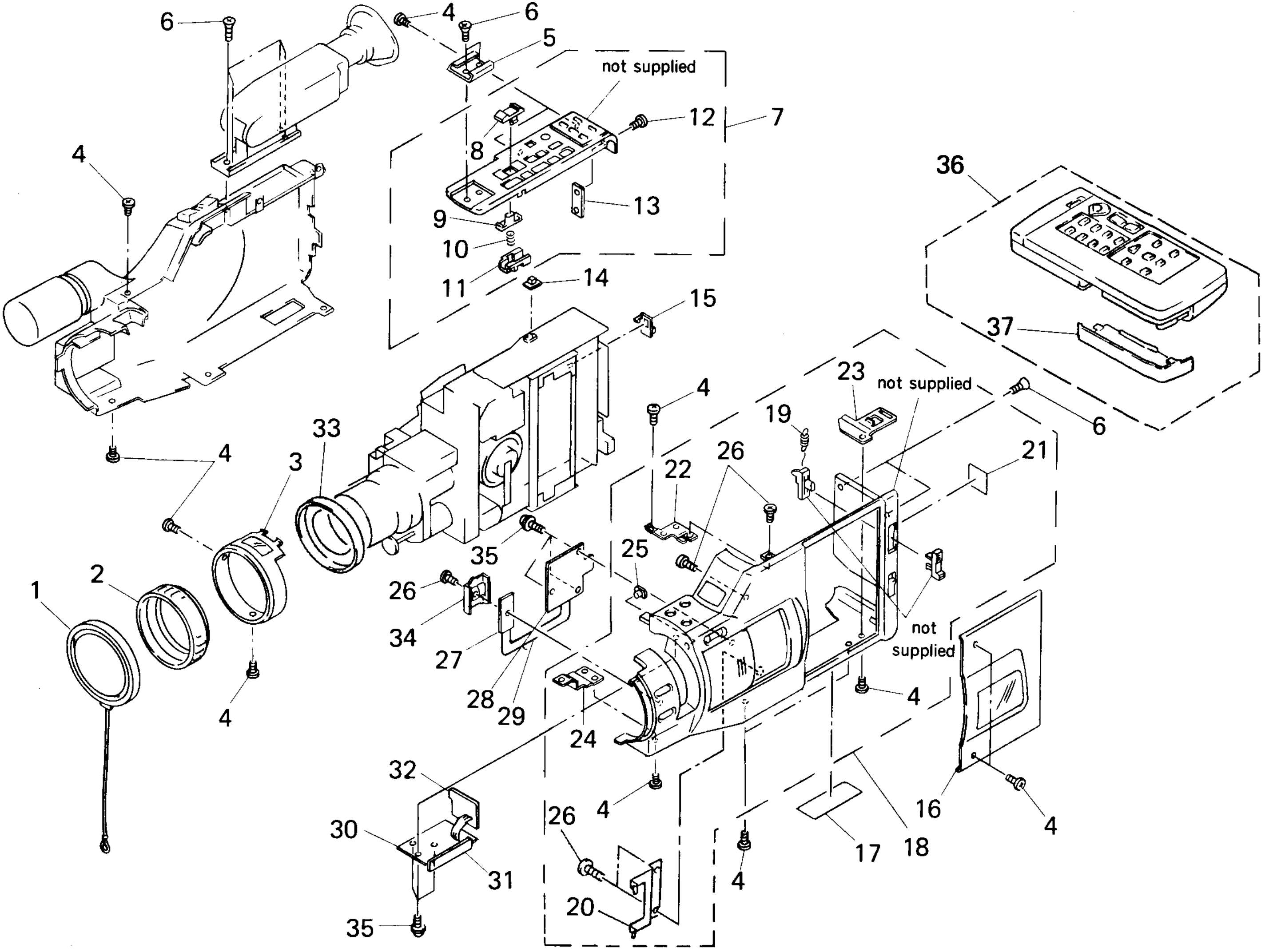
SECTION 5
EXPLODED VIEWS

NOTE:

- The mechanical parts with no reference number in the exploded views are not supplied.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- Due to standardization, parts with part number suffix -XX and -X may be different from the parts specified in the components used on the set.
- The construction parts of an assembled part are indicated with a collation number in the remark column.

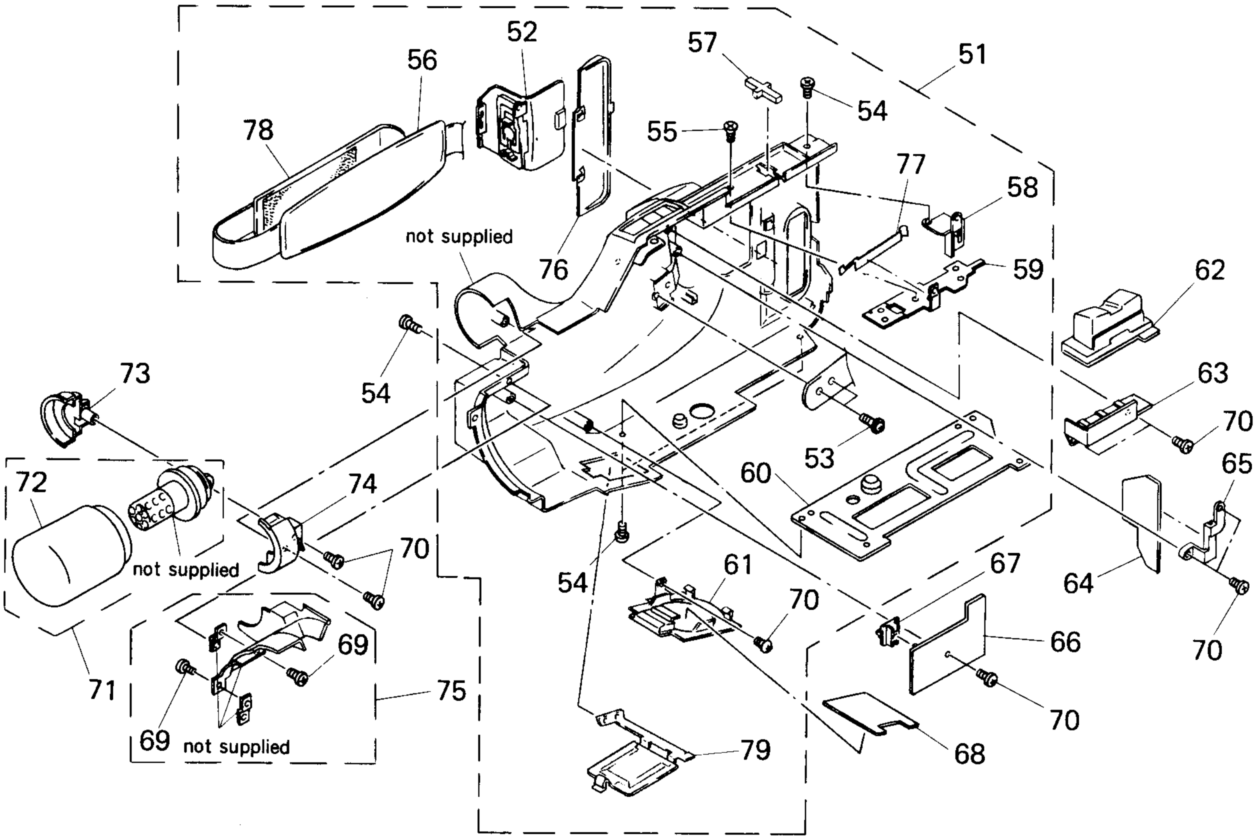
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

5-1. CABINET (R) AND VTR PANEL (L) ASSEMBLIES



No.	Part No.	Description	Remark
1	A-7091-184-A	CAP BLOCK ASSY, HOOD	
2	3-728-269-01	HOOD	
3	X-3744-852-1	HOOP ASSY, LENS	
4	3-719-381-01	SCREW (M2X4)	
5	3-724-511-01	SHOE, ACCESSORY	
6	3-719-831-21	SCREW (M2X4)	
7	X-3744-868-1	PANEL (L) ASSY, VTR (AEP/UK MODEL)	8-13
	X-3749-117-1	PANEL (L) ASSY, VTR (E/AU MODEL)	8-13
8	3-744-723-01	BUTTON (10), POWER	
9	*3-718-257-11	BUTTON, PUSH, POWER	
10	3-303-973-00	SPRING, COMPRESSION	
11	3-744-815-01	PLATE, BLIND, POWER	
12	3-719-381-31	SCREW (M2X3)	
13	3-744-824-01	JOINT, RV	
14	3-744-809-21	BUTTON, EDIT	
15	3-744-875-21	KNOB, REMOTE	
16	X-3744-867-1	LID (L) ASSY, CASSETTE	
17	*3-744-955-01	LABEL, MODEL NUMBER (AE)	
18	X-3744-869-1	CABINET (R) ASSY	4, 19-26
19	3-674-402-00	SPRING, TENSION	
20	3-744-871-01	SPRING, LOCK	
21	*3-719-683-01	LABEL, BATTERY FITTING	
22	3-744-810-01	RETAINER, SHOE	
23	3-744-811-01	SHEET METAL (LOWER), STRAP	
24	3-744-821-01	JOINT, L/R	
25	3-744-847-01	GUIDE	
26	3-713-790-21	SCREW (M2X6), TAPPING, P3	
27	*1-633-939-21	ZK-10P BOARD	
28	*1-633-935-21	CK-40P BOARD	
29	1-633-985-11	FP-298 FLEXIBLE BOARD	
30	*A-7062-277-A	DK-6P BOARD, COMPLETE	
31	*1-633-932-21	ED-20P BOARD	
32	*1-633-937-21	RM-23P BOARD	
33	3-744-839-01	RING, CONVERSION	
34	3-744-812-01	SHEET METAL, ZK	
35	3-669-480-21	+ PTPWH 2	
36	1-465-395-81	COMMANDER, REMOTE (RMT-502)(AEP/UK MODEL)	37
	1-465-395-41	COMMANDER, REMOTE (RMT-502)(AU/E MODEL)	37
37	3-724-854-01	CASE, BATTERY	

5-2. CABINET (L) ASSEMBLY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72
74
not supplied
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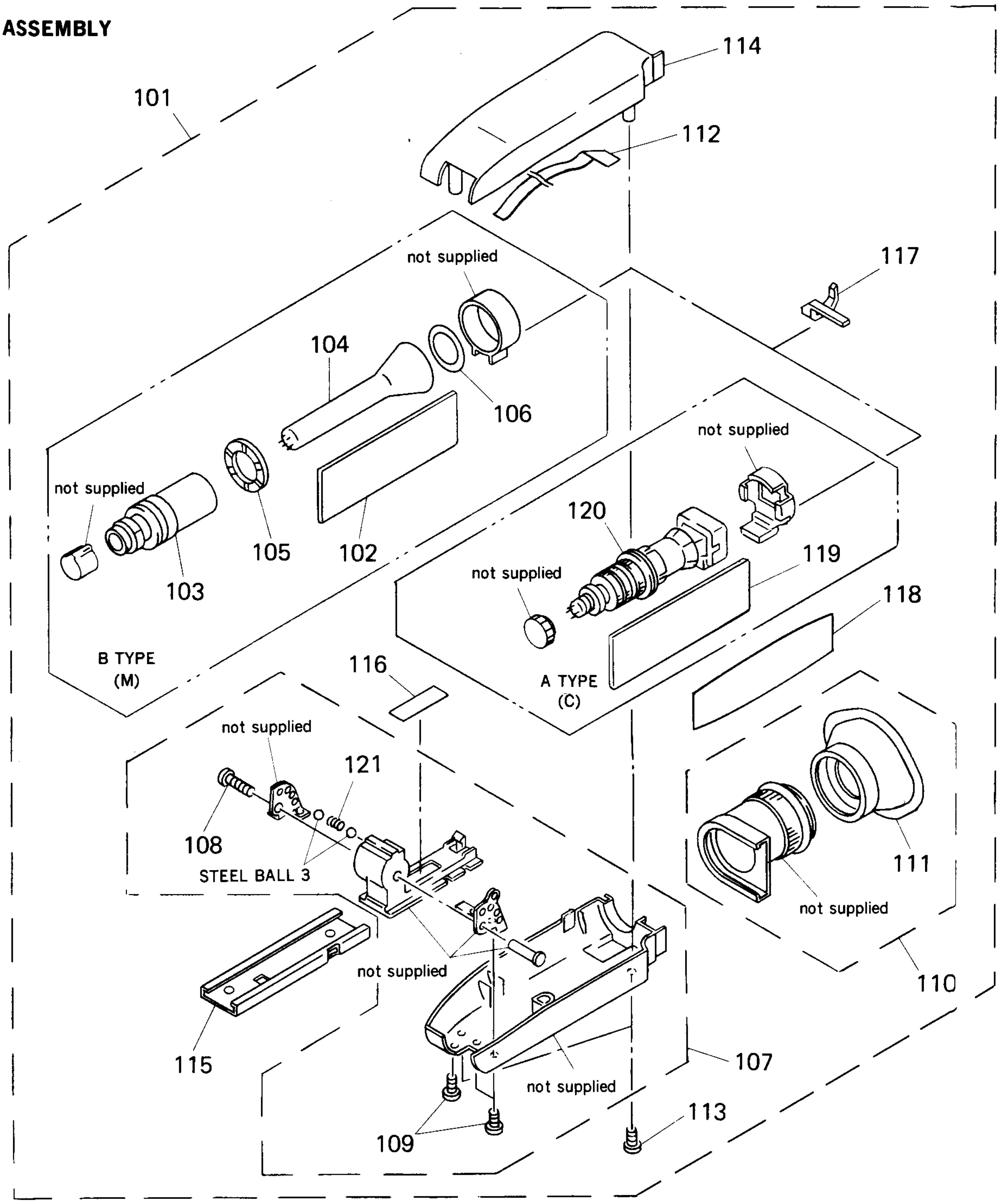
71
75
70
69
not supplied
79
68

No.	Part No.	Description	Remark
51	A-7081-189-A	CABINET (L) BLOCK ASSY (E/AU MODEL)	52-61, 70, 76-79
	A-7081-226-A	CABINET (L) BLOCK ASSY (AEP/UK MODEL)	52-61, 70, 76-79
52	X-3744-855-1	KNOB ASSY, SP	
53	3-669-480-21	+ PTPWH 2	
54	3-744-720-11	SCREW (M2X3)	
55	3-719-831-21	SCREW (M2X4)	
56	3-724-591-01	PAD, GRIP	
57	3-744-709-01	LOCK, SLIDE	
58	3-744-804-01	SHEET METAL (UPPER), STRAP	
59	X-3744-828-1	RETAINER ASSY, EVF	
60	3-744-837-01	SHEET METAL, TRIPOD	
61	3-744-841-01	HOLDER, LI PC BOARD	
62	1-572-286-31	SWITCH, PUSH (ZOOM) (S901)	
63	3-744-805-01	BUTTON (BASE), ZOOM	
64	*A-7071-186-A	SW-124P BOARD, COMPLETE	
65	3-744-808-01	RETAINER, SW	
66	*A-7062-280-A	MC-44P BOARD, COMPLETE	
67	3-744-807-31	BUTTON, MICROPHONE	
68	*1-633-936-21	LI-18P BOARD	
69	3-744-720-11	SCREW (M2X3)	
70	3-713-790-21	SCREW (M2X6), TAPPING, P3	
71	1-542-125-21	MICROPHONE (C-2027)	72
72	3-707-650-11	SCREEN, WIND	
73	3-744-833-21	HOLDER, MICROPHONE	
74	3-744-834-21	HOUSING, MICROPHONE	
75	X-3744-854-1	COVER ASSY, LENS	69
76	3-744-874-91	LID, CONNECTOR	
77	3-744-876-01	SPRING, EVF LOCK	
78	3-739-866-81	BELT, GRIP	
79	3-744-840-21	LID, BATTERY CASE	

5-3. EVF ASSEMBLY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102
103
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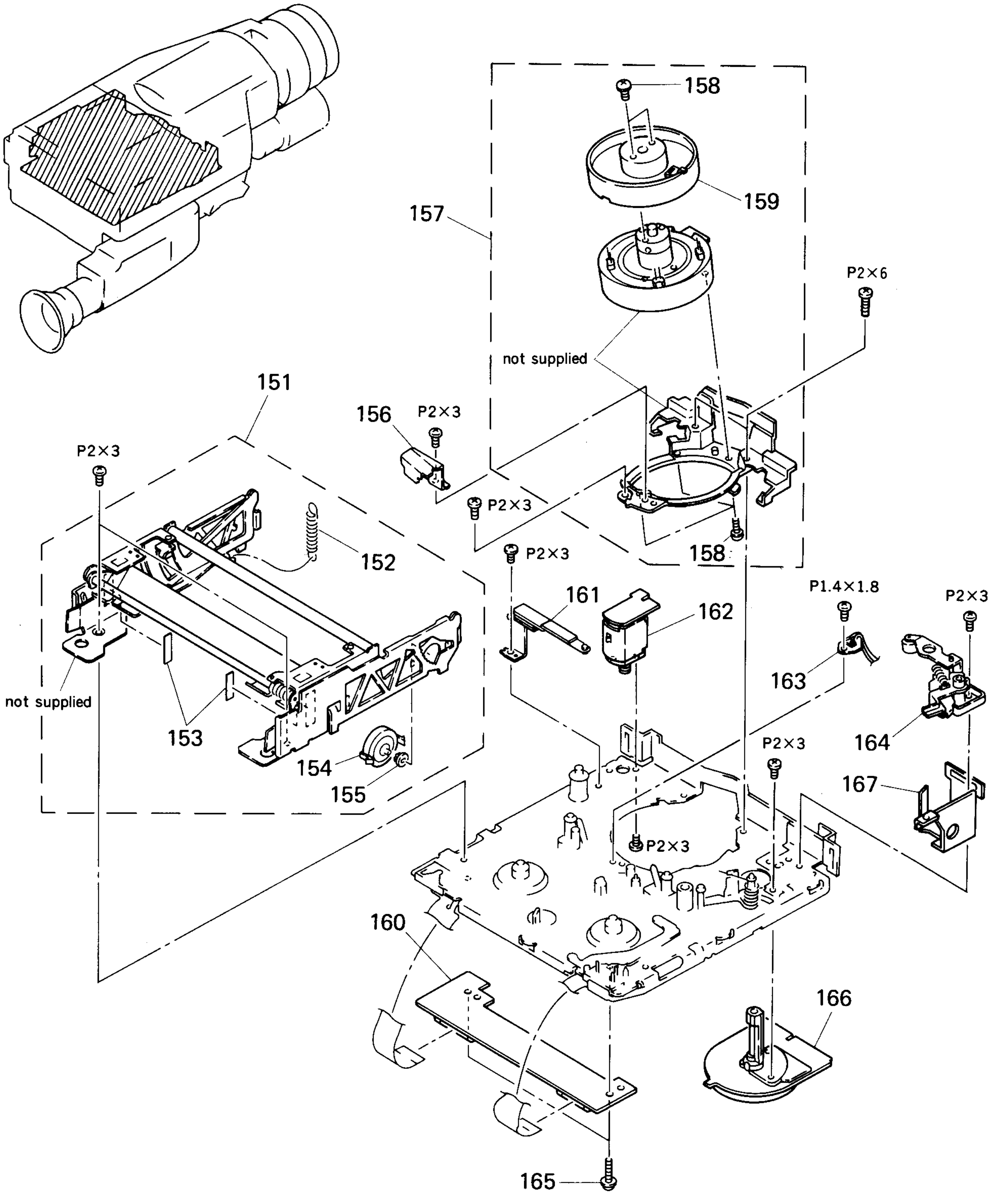
B TYPE
(M)
116
A TYPE
(C)
not supplied
121
108
STEEL BALL 3
111
not supplied
not supplied
110
115
107
not supplied
113
109

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

No.	Part No.	Description	Remark
101	A-7019-235-A	EVF (M) ASSY	102-118, 121
	A-7019-237-A	EVF (C) ASSY	107-121
102	*A-7062-278-A	VF-26P BOARD, COMPLETE	
103	⚠.1-451-310-21	DEFLECTION YOKE (B/W)	
104	⚠.1-546-085-11	CATHODE-RAY TUBE, B/W (M01KGG007WB)	(V901-1)
105	3-724-549-01	LOCK, CRT	
106	3-724-570-01	RING, CRT FIXED	
107	X-3744-859-1	CASE ASSY, VF (LOWER)	108, 109, 121
108	3-732-012-11	SCREW (M2X5)	
109	3-744-720-11	SCREW (M2X3)	
110	X-3744-858-1	EYE PIECE BLOCK ASSY	111
111	3-733-922-01	EYE CUP	
112	1-634-011-11	FP-264 FLEXIBLE BOARD	
113	3-713-790-31	SCREW (M2X8), TAPPING, P3	
114	3-744-705-21	CASE, VF (UPPER)	
115	3-744-712-01	SHOE, VF	
116	3-744-716-01	COVER, FL	
117	3-744-722-01	GUIDE, VF TALLY	
118	3-744-775-01	INSULATOR, VF	
119	*A-7062-279-A	VF-27P BOARD, COMPLETE	
120	⚠.1-452-482-11	CRT ASSY (M91JYZ60WB) (V901-2)	
121	3-302-492-00	SPRING, COMPRESSION	

5-4. MECHANICAL ASSEMBLY (1)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P2×3
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164
not supplied
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P2×3
167
P2×3
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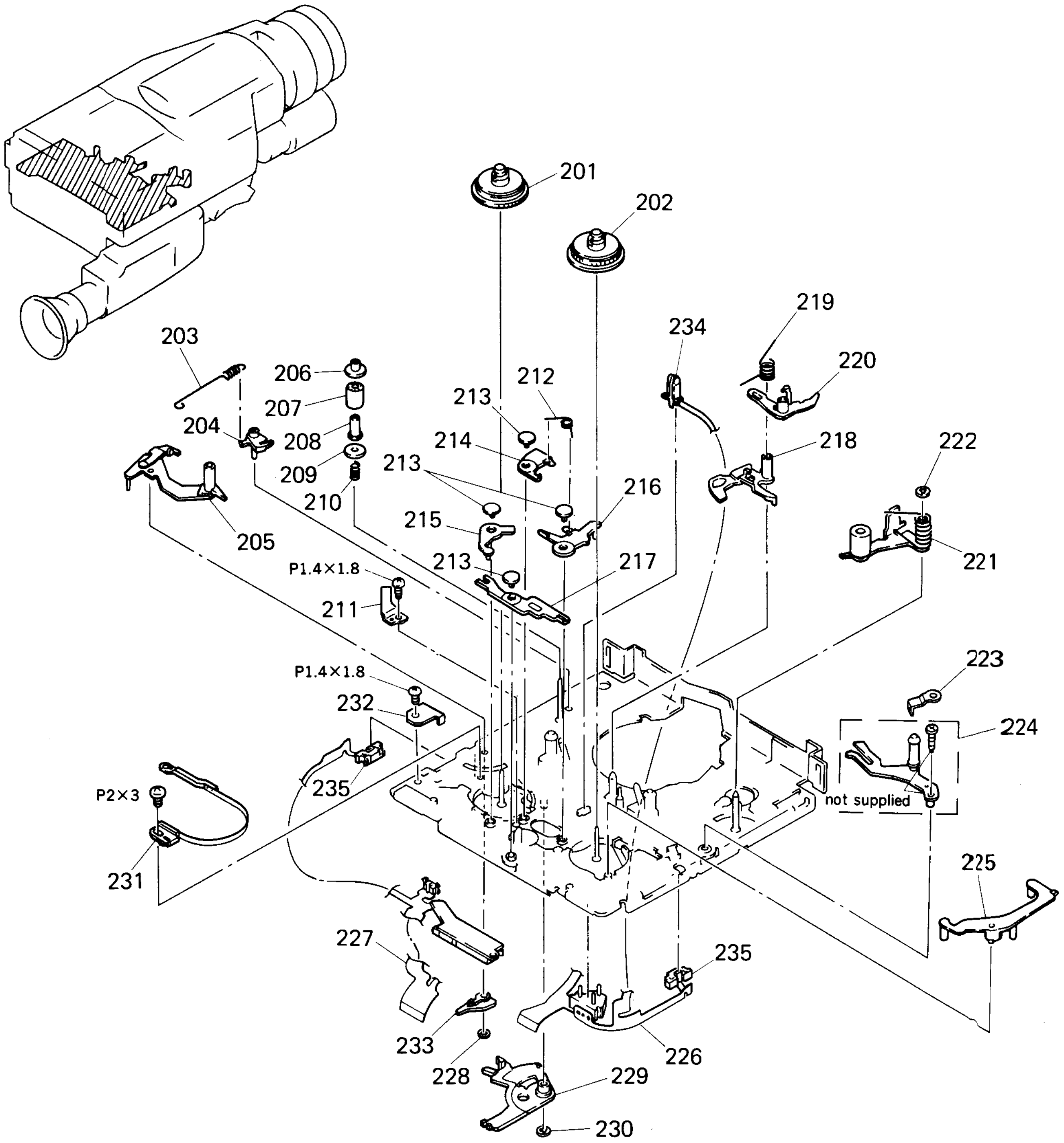
166
165

No.	Part No.	Description	Remark
151	X-3728-874-1	CASSETTE COMPARTMENT ASSY (N)	152-155
152	3-728-825-03	SPRING, TENSION	
153	*3-728-829-01	TAPE	
154	3-728-867-02	DAMPER, OIL	
155	3-728-828-02	GEAR, DAMPER	
156	3-728-868-01	GUARD, GUIDE	
157	A-7048-405-A	DRUM ASSY (DGU-64A-R)	158, 159
158	3-686-493-01	SCREW (M2X5), P1	
159	A-7049-343-A	DRUM ASSY, ROTARY (UPPER) (DGR-64-R)	
160	*1-633-941-21	CC-31P BOARD	
161	X-3728-864-1	GROUND ASSY, SHAFT	
162	A-7040-208-A	MOTOR ASSY, THREADING (LOADING) (M903)	
163	1-808-505-12	SENSOR (DEW)	
164	A-7040-207-A	ROLLER BLOCK ASSY, HC	
165	3-713-790-01	SCREW (M2X5), TAPPING, P3	
166	8-835-331-01	MOTOR, DC U-22A (CAPSTAN) (M902)	
167	3-744-114-01	BASE (RP)	

5-5. MECHANICAL ASSEMBLY (2)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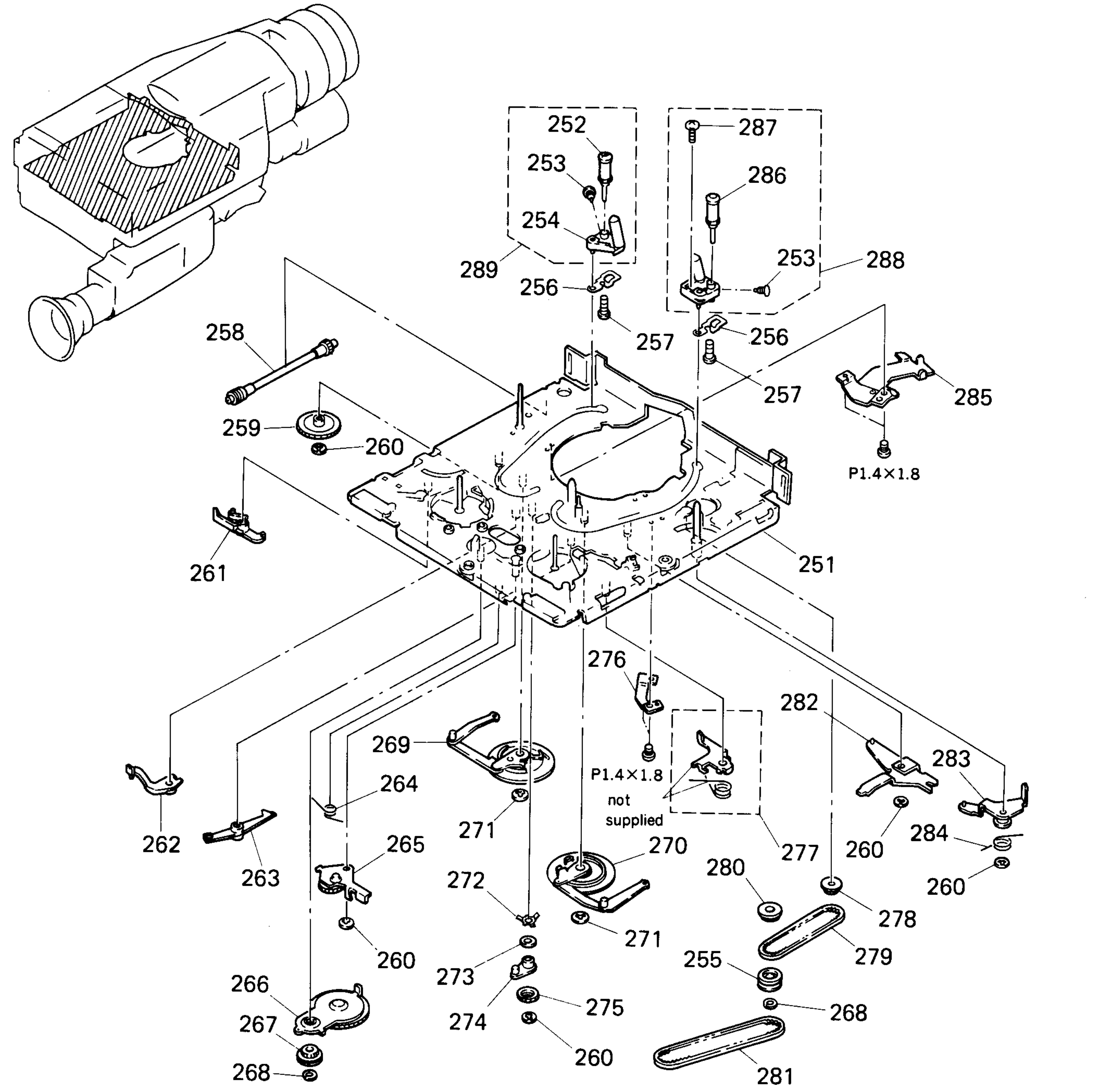
P1.4×1.8
P2×3
not supplied

No.	Part No.	Description	Remark
201	X-3728-851-1	TABLE ASSY, REEL, S	
202	X-3728-855-1	TABLE ASSY, REEL, T	
203	3-736-414-01	SPRING, TENSION	
204	3-728-855-03	ARM, ADJUSTMENT	
205	X-3728-867-1	ARM ASSY (S), TENSION REGULATOR	
206	3-726-884-01	FLANGE, UPPER, TG2	
207	3-726-883-01	ROLLER, TG2	
208	3-726-885-01	SLEEVE, TG2	
209	3-726-882-02	FLANGE, LOWER, TG2	
210	3-726-886-01	SPRING, COMPRESSION	
211	3-726-848-01	RETAINER, TL	
212	3-726-866-01	SPRING (ST), TORSION	
213	3-726-858-01	PIN, SHAFT RETAINER	
214	3-728-849-01	BRAKE, S	
215	3-726-852-01	BRAKE, LB	
216	3-728-850-01	BRAKE, T	
217	3-726-853-01	LEVER, LB	
218	3-728-875-01	STOPPER, RK	
219	3-726-864-01	SPRING (RK), TORSION	
220	3-728-852-02	ARM, RK STOPPER	
221	A-7040-219-A	ARM BLOCK ASSY, PINCH	253, 286, 287
222	3-669-465-00	WASHER (1.5), STOPPER	
223	3-728-808-01	SPRING, LEAF	
224	X-3728-869-1	ARM ASSY, TG7	
225	3-728-848-01	ARM, LB RELEASE	
226	1-628-061-12	FP-90 FLEXIBLE BOARD	
227	1-628-060-12	FP-89 FLEXIBLE BOARD	
228	3-321-393-11	WASHER, STOPPER	
229	X-3728-863-1	LEVER ASSY, SW	
230	3-726-829-01	WASHER, STOPPER	
231	X-3726-809-2	BAND ASSY, TENSION REGULATOR	
232	3-730-125-01	RETAINER, SW	
233	X-3728-857-1	STOPPER ASSY, TENSION REGULATOR	
234	3-728-837-01	HOLDER, LED	
235	3-728-869-02	HOLDER, SENSOR	

5-6. MECHANICAL ASSEMBLY (3)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283
P1.4×1.8
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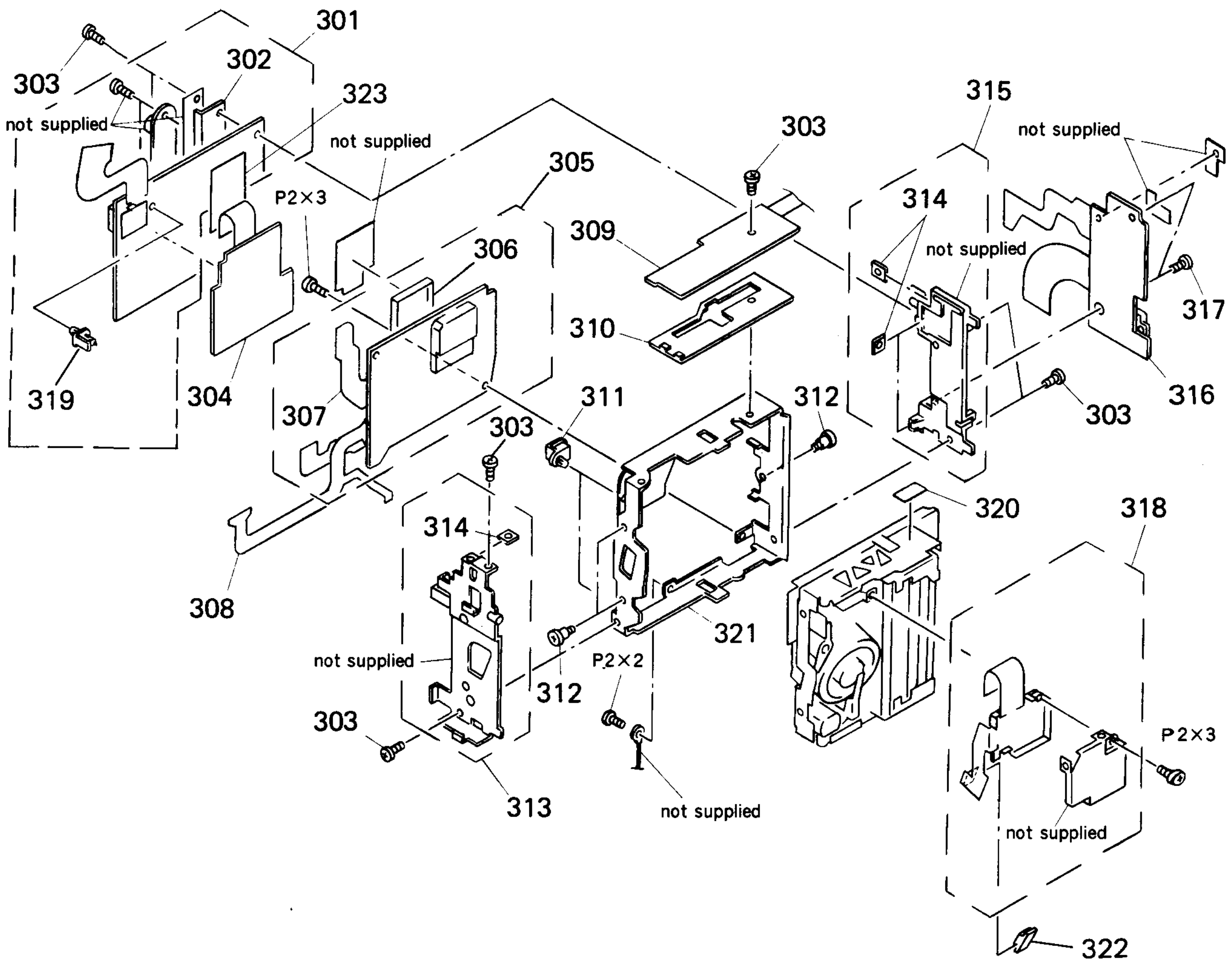
281

No.	Part No.	Description	Remark
251	X-3728-862-1	CHASSIS ASSY, MECHANICAL	
252	X-3726-820-1	ROLLER ASSY (U), GUIDE	
253	3-726-822-01	SCREW (M1.4X2) (STEP), HEAD	
254	X-3726-818-1	COASTER (LEFT) ASSY	
255	3-741-196-01	PULLEY (LOWER), BELT MIDWAY	
256	3-736-485-01	SPRING, LEAF, COSTER	
257	3-726-830-01	SCREW (M1.4X4) (THREE LOCK)	
258	X-3728-868-1	WORM ASSY	
259	3-744-109-01	GEAR, WHEEL	
260	3-726-829-01	WASHER, STOPPER	
261	3-728-842-01	LEVER, EJECT	
262	3-728-851-01	BRAKE, UL	
263	3-726-854-01	ARM, BRAKE RELEASE	
264	3-726-865-01	SPRING (LB), TORSION	
265	A-7040-225-A	GEAR BLOCK ASSY (N), LB	
266	X-3728-866-1	GEAR ASSY, RK	
267	X-3728-858-1	GEAR ASSY, RC	
268	3-321-393-11	WASHER, STOPPER	
269	X-3728-842-1	GEAR (LEFT) ASSY, DRIVE	
270	X-3728-843-1	GEAR (RIGHT) ASSY, DRIVE	
271	3-669-465-00	WASHER (1.5), STOPPER	
272	3-726-867-01	SPRING, LEAF	
273	3-701-436-21	WASHER, POLYEHTHYLENE	
274	3-726-857-02	ARM, UL	
275	3-726-856-02	GEAR, UL	
276	*3-726-805-01	REINFORCEMENT (TT)	
277	X-3726-808-2	BRAKE ASSY, TS	
278	X-3726-805-1	GEAR ASSY, JOINT	
279	3-728-866-11	BELT (S), TIMING	
280	X-3726-838-1	PULLEY (UPPER) ASSY, MIDWAY	
281	3-741-197-01	BELT (L), TIMING	
282	X-3728-846-1	LEVER ASSY, THREADING	
283	X-3726-824-1	ARM ASSY, PINCH SUB	
284	3-726-895-01	SPRING	
285	X-3726-841-1	REINFORCEMENT (SS) ASSY	
286	X-3728-810-1	ROLLER ASSY (U)(PLATING), GUIDE	
287	3-736-473-01	SCREW (M2X0.25) (THREE LOCK)	
288	A-7040-217-A	COASTER (RIGHT) BLOCK ASSY(N1P)	253, 286, 287
289	A-7040-128-A	COASTER (LEFT) BLOCK ASSY	252-254

5-7. MAIN BOARD ASSEMBLY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321
not supplied
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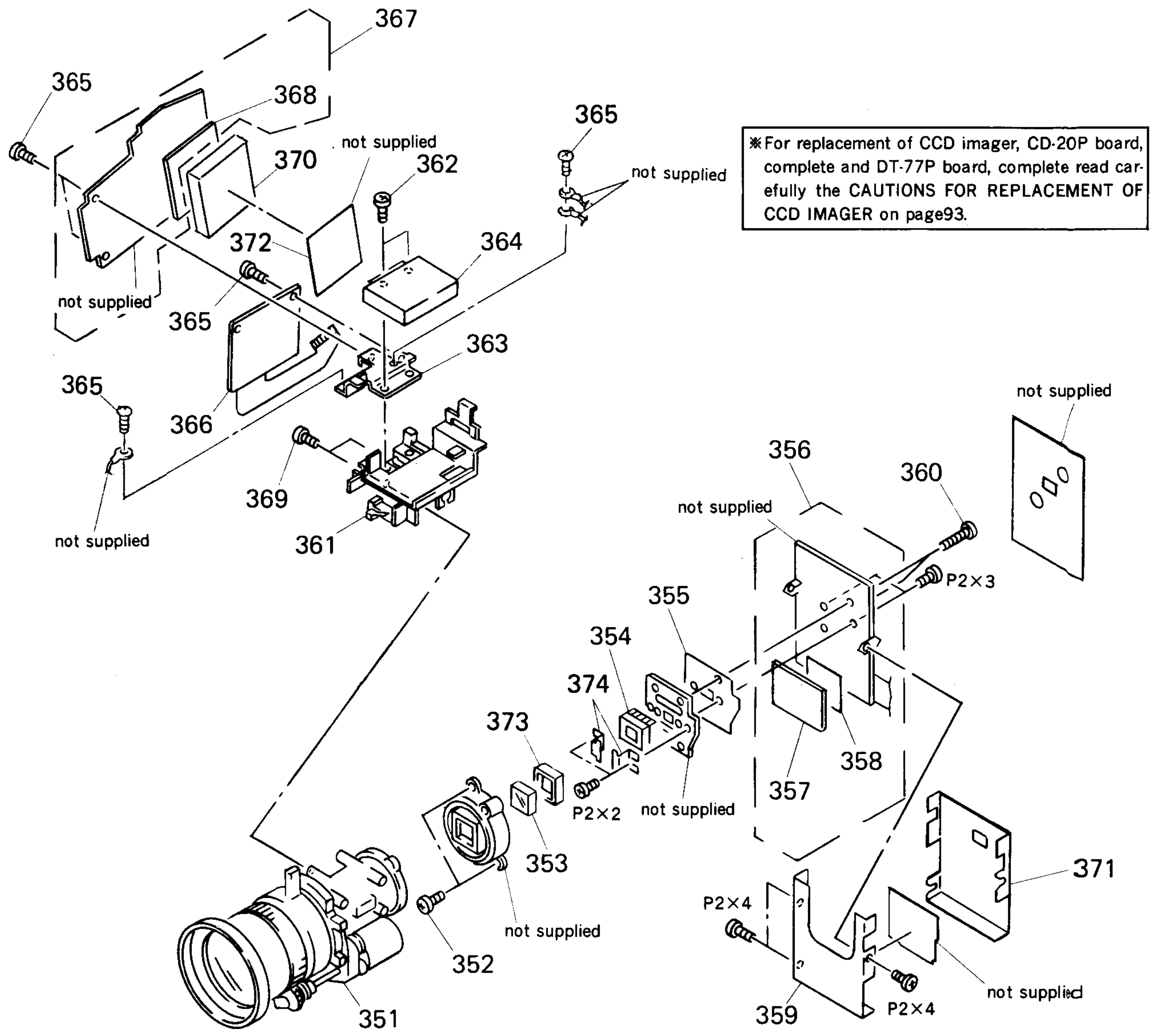
313
not supplied
P2×3
not supplied
322

No.	Part No.	Description	Remark
301	*A-7062-272-A	VA-46P BOARD, COMPLETE (AEP/UK MODEL)	302, 319
	*A-7062-379-A	VA-46P BOARD, COMPLETE (E/AU MODEL)	302, 319
302	X-3744-801-1	REINFORCEMENT ASSY, VA	
303	3-744-720-11	SCREW (M2X3)	
304	*A-7062-273-A	CT-21P BOARD, COMPLETE	
305	*A-7062-281-A	SS-100P (H) BOARD, COMPLETE	306, 307
306	*X-3744-601-1	CASE ASSY (DD-B), SHIELD	
307	1-633-924-11	FP-248 FLEXIBLE BOARD	
308	1-633-922-11	FP-249 FLEXIBLE BOARD	
309	*A-7071-180-A	VK-10P BOARD, COMPLETE (AEP/UK MODEL)	
	*A-7071-256-A	VK-10P BOARD, COMPLETE (E/AU MODEL)	
310	*3-744-849-01	PLATE, BOTTOM, VTR	
311	3-744-609-01	HINGE (C), PC BOARD	
312	3-744-603-01	SCREW	
313	X-3744-805-1	HOLDER ASSY, MD	314
314	3-718-233-01	NUT, PLATE	
315	X-3744-810-1	FRAME (R) ASSY, MD	314
316	*A-7062-274-A	FU-72P BOARD, COMPLETE	
317	3-713-790-21	SCREW (M2X6), TAPPING, P3	
318	8-741-509-51	IC SBX1509-51 (RP-77 (HIC) BOARD)	
319	*3-744-842-01	SUPPORT, CT BOARD	
320	*3-730-176-11	SHEET, MD	
321	X-3744-602-1	FRAME ASSY, MD	
322	1-569-347-11	CONNECTOR, FPC (TRANSLATION) 13P	
323	*3-744-890-01	PLATE, PROTECTION, FLEXIBLE	

5-8. CAMERA BLOCK ASSEMBLY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P2×4
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359
P2×4
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※For replacement of CCD imager, CD-20P board, complete and DT-77P board, complete read carefully the CAUTIONS FOR REPLACEMENT OF CCD IMAGER on page93.

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

No.	Part No.	Description	Remark
351	1-547-412-12	LENS, ZOOM (VCL-8508XF)	
352	3-738-519-01	SCREW (M2X3), +B	
353	1-547-381-12	FILTER BLOCK, OPTICAL	
354	※8-752-604-72	IC ICX039AN-2 (CCD IMAGER) (IC101)	
355	*3-725-180-01	SHEET, INSULATING, CCD HOLDER	
356	*A-7062-270-A	CD-20P BOARD, COMPLETE	357, 358
357	A-7068-173-A	DT-77F BOARD, COMPLETE (HIC)	
358	*X-3739-811-1	PLATE ASSY, SHIELD, CD	
359	*X-3744-702-1	CASE (MAIN) ASSY, SHIELD, C	
360	3-335-640-51	SCREW (M2X16)	
361	*X-3744-808-1	HOLDER ASSY, LENS	
362	3-713-790-21	SCREW (M2X6), TAPPING, P3	
363	*3-744-818-01	PLATE, GROUND, CAMERA	
364	⚠.1-466-230-21	CONVERTER UNIT, D/D	
365	3-719-381-01	SCREW (M2X4)	
366	*A-7062-271-A	AF-54P BOARD, COMPLETE	
367	*A-7062-268-A	VC-67P BOARD, COMPLETE	368
368	*A-7068-180-A	MX-12AP BOARD, COMPLETE	
369	3-719-408-01	SCREW (B2), TAPPING, P3	
370	*3-744-763-01	CASE, SHIELD, VC	
371	*3-744-702-01	LID, C SHIELD CASE	
372	*3-744-892-01	INSULATOR, VC	
373	*3-725-177-01	RUBBER, SEAL	
374	*3-725-175-01	STOPPER, CCD	

SECTION 6
ELECTRICAL PARTS LIST

NOTE:

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- If there are two or more same circuits in a set such as a stereophonic machine, only typical circuit parts may be indicated and capacitors and resistors in other same circuits may be omitted.

CAPACITORS:
MF: μF, PF: μμF.

RESISTORS
- All resistors are in ohms.
- F: nonflammable

COILS
- MMH: mH, UH: μH

SEMICONDUCTORS
In each case, U: μ, for example:
UA...: μA..., UPA...: μPA...,
UPC...: μPC, UPD...: μPD...

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description		Remark
	*A-7062-272-A	VA-46P BOARD, COMPLETE (AEP/UK MODEL) ************************		
	*A-7062-379-A	VA-46P BOARD, COMPLETE (E/AU MODEL) ************************ (Ref.No 3,000 Series)		
	1-633-976-11	FP-251 FLEXIBLE BOARD		
	3-719-695-01	SCREW (M1.7X3.5), SPECIAL HEAD		
	*3-744-816-01	CASE (MAIN), SHIELD, VA		
	*3-744-817-01	CASE (BOTTOM), SHIELD, VA		
		CAPACITOR		
C002	1-162-952-11	CERAMIC CHIP 82PF	5%	50V
C071	1-128-004-11	ELECT CHIP 10MF	20%	16V
C072	1-164-227-11	CERAMIC CHIP 0.022MF	10%	25V
C101	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C102	1-128-004-11	ELECT CHIP 10MF	20%	16V
C103	1-163-035-00	CERAMIC CHIP 0.047MF		50V
C104	1-162-947-11	CERAMIC CHIP 33PF	5%	50V
C105	1-162-965-11	CERAMIC CHIP 0.0015MF	10%	50V
C106	1-162-958-11	CERAMIC CHIP 270PF	5%	50V
C108	1-162-958-11	CERAMIC CHIP 270PF	5%	50V
C109	1-162-941-11	CERAMIC CHIP 10PF	0.50PF	50V
C110	1-162-945-11	CERAMIC CHIP 22PF	5%	50V
C111	1-162-995-11	CERAMIC CHIP 0.022MF		50V
C112	1-162-970-11	CERAMIC CHIP 0.01MF	10%	25V
C113	1-162-942-11	CERAMIC CHIP 12PF	5%	50V
C114	1-162-970-11	CERAMIC CHIP 0.01MF	10%	25V
C117	1-162-947-11	CERAMIC CHIP 33PF	5%	50V
C121	1-164-222-11	CERAMIC CHIP 0.22MF		25V
C122	1-128-004-11	ELECT CHIP 10MF	20%	16V
C123	1-162-954-11	CERAMIC CHIP 120PF	5%	50V
C125	1-162-949-11	CERAMIC CHIP 47PF	5%	50V
C127	1-162-948-11	CERAMIC CHIP 39PF	5%	50V
C129	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C131	1-162-955-11	CERAMIC CHIP 150PF	5%	50V
C132	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C134	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C135	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C137	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C141	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C143	1-162-948-11	CERAMIC CHIP 39PF	5%	50V
C144	1-162-946-11	CERAMIC CHIP 27PF	5%	50V
C145	1-164-156-11	CERAMIC CHIP 0.1MF		25V
C146	1-162-995-11	CERAMIC CHIP 0.022MF		50V
C147	1-162-995-11	CERAMIC CHIP 0.022MF		50V
C171	1-124-778-00	ELECT CHIP 22MF	20%	6.3V
C172	1-162-943-11	CERAMIC CHIP 15PF	5%	50V
C181	1-164-005-11	CERAMIC CHIP 0.47MF		25V
C182	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C183	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C201	1-162-959-11	CERAMIC CHIP 330PF	5%	50V
C202	1-162-957-11	CERAMIC CHIP 220PF	5%	50V
C203	1-164-005-11	CERAMIC CHIP 0.47MF		25V
C204	1-128-004-11	ELECT CHIP 10MF	20%	16V
C205	1-128-004-11	ELECT CHIP 10MF	20%	16V
C206	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C207	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C208	1-126-205-11	ELECT CHIP 47MF	20%	6.3V
C209	1-126-154-11	ELECT 47MF	20%	6.3V
C210	1-128-008-11	ELECT CHIP 3.3MF	20%	35V
C211	1-128-004-11	ELECT CHIP 10MF	20%	16V
C212	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C213	1-128-008-11	ELECT CHIP 3.3MF	20%	35V
C214	1-162-950-11	CERAMIC CHIP 56PF	5%	50V
C215	1-128-004-11	ELECT CHIP 10MF	20%	16V
C216	1-126-607-11	ELECT CHIP 47MF	20%	4V
C217	1-162-944-11	CERAMIC CHIP 18PF	5%	50V
C218	1-126-209-11	ELECT CHIP 100MF	20%	4V
C219	1-162-955-11	CERAMIC CHIP 150PF	5%	50V
C220	1-162-943-11	CERAMIC CHIP 15PF	5%	50V
C221	1-162-953-11	CERAMIC CHIP 100PF	5%	50V
C222	1-162-948-11	CERAMIC CHIP 39PF	5%	50V
C224	1-135-180-21	TANTAL. CHIP 3.3MF	20%	6.3V
C225	1-164-156-11	CERAMIC CHIP 0.1MF		25V
C226	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C227	1-135-180-21	TANTAL. CHIP 3.3MF	20%	6.3V
C228	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C229	1-135-180-21	TANTAL. CHIP 3.3MF	20%	6.3V
C230	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C231	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C232	1-162-638-11	CERAMIC CHIP 1MF		16V
C233	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C234	1-135-157-21	TANTAL. CHIP 10MF	20%	6.3V
C235	1-135-157-21	TANTAL. CHIP 10MF	20%	6.3V
C236	1-162-950-11	CERAMIC CHIP 56PF	5%	50V
C237	1-128-004-11	ELECT CHIP 10MF	20%	16V
C238	1-162-953-11	CERAMIC CHIP 100PF	5%	50V
C239	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C240	1-128-004-11	ELECT CHIP 10MF	20%	16V
C241	1-128-004-11	ELECT CHIP 10MF	20%	16V
C242	1-128-003-11	ELECT CHIP 22MF	20%	4V
C243	1-128-004-11	ELECT CHIP 10MF	20%	16V
C244	1-162-946-11	CERAMIC CHIP 27PF	5%	50V
C246	1-128-003-11	ELECT CHIP 22MF	20%	4V
C247	1-164-005-11	CERAMIC CHIP 0.47MF		25V
C248	1-128-004-11	ELECT CHIP 10MF	20%	16V
C249	1-128-004-11	ELECT CHIP 10MF	20%	16V
C250	1-128-004-11	ELECT CHIP 10MF	20%	16V
C251	1-128-004-11	ELECT CHIP 10MF	20%	16V
C252	1-164-222-11	CERAMIC CHIP 0.22MF		25V
C253	1-164-005-11	CERAMIC CHIP 0.47MF		25V
C254	1-128-004-11	ELECT CHIP 10MF	20%	16V
C255	1-128-006-11	ELECT CHIP 4.7MF	20%	25V
C256	1-126-246-11	ELECT CHIP 220MF	20%	4V
C257	1-162-974-11	CERAMIC CHIP 0.01MF		50V

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Ref.No	Part No.	Description		Remark
C258	1-128-004-11	ELECT CHIP 10MF	20%	16V
C259	1-163-035-00	CERAMIC CHIP 0.047MF		50V
C261	1-124-779-00	ELECT CHIP 10MF	20%	16V
C262	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C263	1-126-207-11	ELECT CHIP 33MF	20%	4V
C264	1-162-962-11	CERAMIC CHIP 470PF	10%	50V
C265	1-126-205-11	ELECT CHIP 47MF	20%	6.3V
C266	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C267	1-124-779-00	ELECT CHIP 10MF	20%	16V
C268	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C269	1-128-004-11	ELECT CHIP 10MF	20%	16V
C270	1-163-129-00	CERAMIC CHIP 330PF	5%	50V
C271	1-163-131-00	CERAMIC CHIP 390PF	5%	50V
C273	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C274	1-128-004-11	ELECT CHIP 10MF	20%	16V
C275	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C276	1-128-004-11	ELECT CHIP 10MF	20%	16V
C277	1-162-942-11	CERAMIC CHIP 12PF	5%	50V
C278	1-163-135-00	CERAMIC CHIP 560PF	5%	50V
C279	1-162-955-11	CERAMIC CHIP 150PF	5%	50V
C280	1-162-957-11	CERAMIC CHIP 220PF	5%	50V
C284	1-128-004-11	ELECT CHIP 10MF	20%	16V
C285	1-163-035-00	CERAMIC CHIP 0.047MF		50V
C286	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C287	1-164-156-11	CERAMIC CHIP 0.1MF		25V
C288	1-126-416-11	ELECT 220MF	20%	10V
C289	1-162-948-11	CERAMIC CHIP 39PF	5%	50V
C301	1-162-944-11	CERAMIC CHIP 18PF	5%	50V
C302	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C303	1-162-970-11	CERAMIC CHIP 0.01MF	10%	25V
C305	1-162-945-11	CERAMIC CHIP 22PF	5%	50V
C306	1-162-970-11	CERAMIC CHIP 0.01MF	10%	25V
C307	1-128-004-11	ELECT CHIP 10MF	20%	16V
C308	1-162-995-11	CERAMIC CHIP 0.022MF		50V
C309	1-126-192-11	ELECT CHIP 0.68MF	20%	50V
C310	1-128-013-11	ELECT CHIP 1MF	20%	50V
C311	1-128-013-11	ELECT CHIP 1MF	20%	50V
C312	1-162-969-11	CERAMIC CHIP 0.0068MF	10%	25V
C315	1-162-970-11	CERAMIC CHIP 0.01MF	10%	25V
C316	1-128-004-11	ELECT CHIP 10MF	20%	16V
C317	1-128-004-11	ELECT CHIP 10MF	20%	16V
C318	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C319	1-164-217-11	CERAMIC CHIP 150PF	0.25PF	50V
C320	1-162-964-11	CERAMIC CHIP 0.001MF	10%	50V
C321	1-162-949-11	CERAMIC CHIP 47PF	5%	50V
C322	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C323	1-162-952-11	CERAMIC CHIP 82PF	5%	50V
C324	1-162-967-11	CERAMIC CHIP 0.0033MF	10%	50V
C325	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C326	1-162-954-11	CERAMIC CHIP 120PF	5%	50V
C327	1-162-951-11	CERAMIC CHIP 68PF	5%	50V
C328	1-162-950-11	CERAMIC CHIP 56PF	5%	50V
C329	1-162-953-11	CERAMIC CHIP 100PF	5%	50V

Ref.No	Part No.	Description		Remark
C330	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C331	1-128-004-11	ELECT CHIP 10MF	20%	16V
C332	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C333	1-162-941-11	CERAMIC CHIP 10PF	0.5PF	50V
C334	1-126-205-11	ELECT CHIP 47MF	20%	6.3V
C335	1-162-957-11	CERAMIC CHIP 220PF	5%	50V
C336	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C337	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C339	1-162-949-11	CERAMIC CHIP 47PF	5%	50V
C340	1-162-937-11	CERAMIC CHIP 6PF	0.5PF	50V
C352	1-128-013-11	ELECT CHIP 1MF	20%	50V
C353	1-162-964-11	CERAMIC CHIP 0.001MF	10%	50V
C354	1-128-006-11	ELECT CHIP 4.7MF	20%	25V
C355	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C357	1-128-004-11	ELECT CHIP 10MF	20%	16V
C358	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C359	1-163-118-00	CERAMIC CHIP 110PF	5%	50V
C360	1-162-964-11	CERAMIC CHIP 0.001MF	10%	50V
C361	1-128-007-11	ELECT CHIP 2.2MF	20%	35V
C362	1-162-964-11	CERAMIC CHIP 0.001MF	10%	50V
C363	1-164-145-11	CERAMIC CHIP 390PF	5%	50V
C364	1-162-970-11	CERAMIC CHIP 0.01MF	10%	25V
C365	1-162-970-11	CERAMIC CHIP 0.01MF	10%	25V
C366	1-162-936-11	CERAMIC CHIP 5PF	0.25PF	50V
C367	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C368	1-162-943-11	CERAMIC CHIP 15PF	5%	50V
C370	1-164-156-11	CERAMIC CHIP 0.1MF		25V
C371	1-162-921-11	CERAMIC CHIP 33PF	5%	50V
C402	1-126-155-11	ELECT 100MF	20%	6.3V
C403	1-162-638-11	CERAMIC CHIP 1MF		16V
C405	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C412	1-135-181-21	TANTAL. CHIP 4.7MF	20%	6.3V
C417	1-126-207-11	ELECT CHIP 33MF	20%	4V
C418	1-126-207-11	ELECT CHIP 33MF	20%	4V
C419	1-162-638-11	CERAMIC CHIP 1MF		16V
C421	1-126-205-11	ELECT CHIP 47MF	20%	6.3V
C423	1-126-205-11	ELECT CHIP 47MF	20%	6.3V
C432	1-135-181-21	TANTAL. CHIP 4.7MF	20%	6.3V
C437	1-128-003-11	ELECT CHIP 22MF	20%	4V
C454	1-162-638-11	CERAMIC CHIP 1MF		16V
C455	1-124-778-00	ELECT CHIP 22MF	20%	6.3V
C459	1-162-971-11	CERAMIC CHIP 0.001MF		50V
C472	1-162-971-11	CERAMIC CHIP 0.001MF		50V
C476	1-128-013-11	ELECT CHIP 1MF	20%	50V
C480	1-162-971-11	CERAMIC CHIP 0.001MF		50V

FILTER

CF301	1-577-162-11	FILTER, CERAMIC

CONNECTOR

CN401	*1-566-761-11	PIN, CONNECTOR (PC BOARD) 6P
CN506	1-569-486-11	CONNECTOR, BOARD TO BOARD 16P
CN507	1-569-485-11	CONNECTOR, BOARD TO BOARD 20P

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description	Remark
CN508	1-569-478-21	CONNECTOR, FPC 20P	
CN601	*1-566-764-11	PIN, CONNECTOR (PC BOARD) 9P	
CN703	1-568-359-41	CONNECTOR, BOARD TO BOARD 20P	
CN704	1-569-363-21	CONNECTOR, FPC 15P	

DIODE

Ref.No	Part No.	Description	Remark
D101	8-719-800-76	DIODE 1SS123	
D202	8-719-941-86	DIODE DAN202U	
D203	8-719-941-86	DIODE DAN202U	
D204	8-719-404-46	DIODE MA110	
D205	8-719-941-86	DIODE DAN202U	
D207	8-719-941-86	DIODE DAN202U	
D208	8-719-941-86	DIODE DAN202U	
D209	8-719-941-86	DIODE DAN202U	
D210	8-719-404-46	DIODE MA110	
D211	8-719-941-86	DIODE DAN202U	
D212	8-719-941-86	DIODE DAN202U	
D215	8-719-404-46	DIODE MA110	
D216	8-719-404-46	DIODE MA110	
D351	8-719-404-46	DIODE MA110	
D406	8-719-404-46	DIODE MA110	
D408	8-719-941-86	DIODE DAN202U	

FILTER

Ref.No	Part No.	Description	Remark
FL201	1-236-751-21	FILTER, LOW PASS	
FL202	1-415-764-21	DELAY LINE, LC	
FL203	1-236-848-21	FILTER, LOW PASS	
FL204	1-415-729-21	DELAY LINE, LC (Y)	
FL205	1-236-847-21	FILTER, LOW PASS	
FL301	1-236-849-21	FILTER, BAND PASS	
FL302	1-236-186-11	FILTER, BAND PASS	
FL303	1-236-850-21	FILTER, BAND PASS	

IC

Ref.No	Part No.	Description	Remark
IC001	8-759-999-02	IC TL1596CDSB	
IC101	8-759-012-00	IC MC10H116M	
IC201	8-752-036-19	IC CXA1207R	
IC202	8-752-335-88	IC CXL1506M	
IC203	8-752-036-20	IC CXA1208R	
IC204	8-759-605-61	IC CXA1203N	
IC205	8-759-710-29	IC NJM2235M	
IC206	8-759-322-02	IC HA118070FPTR	
IC207	8-759-710-07	IC NJM2234M	
IC400	8-741-150-51	IC SBX1505-21	

JACK

Ref.No	Part No.	Description	Remark
J201	1-537-142-21	TERMINAL BOARD (VIDEO/AUDIO)	

COIL

Ref.No	Part No.	Description	Remark
L101	1-412-032-11	INDUCTOR CHIP 100UH	
L102	1-412-280-31	INDUCTOR 330UH	
L103	1-410-167-41	INDUCTOR CHIP 820UH	
L104	1-410-387-11	INDUCTOR CHIP 33UH	
L105	1-410-657-21	INDUCTOR CHIP 180UH	
L106	1-410-387-11	INDUCTOR CHIP 33UH	
L109	1-410-381-11	INDUCTOR CHIP 10UH	
L110	1-410-657-21	INDUCTOR CHIP 180UH	
L122	1-410-658-31	INDUCTOR CHIP 220UH	
L124	1-412-280-31	INDUCTOR 330UH	
L125	1-410-380-31	INDUCTOR CHIP 8.2UH	
L126	1-412-032-11	INDUCTOR CHIP 100UH	
L129	1-412-026-11	INDUCTOR CHIP 1UH	
L171	1-410-392-11	INDUCTOR CHIP 82UH	
L181	1-412-026-11	INDUCTOR CHIP 1UH	
L201	1-410-390-11	INDUCTOR CHIP 56UH	
L202	1-410-391-11	INDUCTOR CHIP 68UH	
L203	1-410-370-31	INDUCTOR CHIP 1.2UH	
L204	1-410-392-11	INDUCTOR CHIP 82UH	
L205	1-412-031-11	INDUCTOR CHIP 47UH	
L206	1-412-031-11	INDUCTOR CHIP 47UH	
L207	1-410-389-31	INDUCTOR CHIP 47UH	
L209	1-412-031-11	INDUCTOR CHIP 47UH	
L210	1-410-393-11	INDUCTOR CHIP 100UH	
L211	1-410-375-11	INDUCTOR CHIP 3.3UH	
L212	1-410-379-21	INDUCTOR CHIP 6.8UH	
L214	1-410-377-31	INDUCTOR CHIP 4.7UH	
L301	1-410-393-11	INDUCTOR CHIP 100UH	
L302	1-410-386-11	INDUCTOR CHIP 27UH	
L304	1-410-393-11	INDUCTOR CHIP 100UH	
L305	1-410-393-11	INDUCTOR CHIP 100UH	
L306	1-410-655-31	INDUCTOR CHIP 120UH	
L307	1-410-656-11	INDUCTOR CHIP 150UH	
L308	1-410-379-11	INDUCTOR CHIP 6.8UH	

TRANSISTOR

Ref.No	Part No.	Description	Remark
Q001	8-729-905-23	TRANSISTOR 2SA1576-R	
Q002	8-729-905-35	TRANSISTOR 2SC4081-R	
Q004	8-729-905-35	TRANSISTOR 2SC4081-R	
Q005	8-729-905-35	TRANSISTOR 2SC4081-R	
Q059	8-729-905-18	TRANSISTOR DTC144E	
Q060	8-729-905-18	TRANSISTOR DTC144E	
Q061	8-729-905-18	TRANSISTOR DTC144E	
Q062	8-729-905-18	TRANSISTOR DTC144E	
Q063	8-729-905-12	TRANSISTOR DTA144E	
Q101	8-729-905-23	TRANSISTOR 2SA1576-R	
Q102	8-729-905-18	TRANSISTOR DTC144EU	
Q105	8-729-905-35	TRANSISTOR 2SC4081-R	
Q106	8-729-102-07	TRANSISTOR 2SC2223-F13	
Q107	8-729-905-12	TRANSISTOR DTA144EU	
Q109	8-729-905-35	TRANSISTOR 2SC4081-R	
Q110	8-729-905-18	TRANSISTOR DTC144EU	
Q115	8-729-905-35	TRANSISTOR 2SC4081-R	
Q117	8-729-905-35	TRANSISTOR 2SC4081-R	
Q118	8-729-905-23	TRANSISTOR 2SA1576-R	
Q119	8-729-905-35	TRANSISTOR 2SC4081-R	
Q121	8-729-141-48	TRANSISTOR 2SB624-BV345	

When indicating parts by reference number, please include the board name.

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Ref.No	Part No.	Description	Remark
Q122	8-729-102-07	TRANSISTOR 2SC2223-F13	
Q123	8-729-905-35	TRANSISTOR 2SC4081-R	
Q140	8-729-905-12	TRANSISTOR DTA144EU	
Q141	8-729-905-35	TRANSISTOR 2SC4081-R	
Q142	8-729-101-07	TRANSISTOR 2SB798-DL	
Q154	8-729-905-35	TRANSISTOR 2SC4081-R	
Q171	8-729-905-35	TRANSISTOR 2SC4081-R	
Q172	8-729-905-35	TRANSISTOR 2SC4081-R	
Q191	8-729-905-35	TRANSISTOR 2SC4081-R	
Q192	8-729-905-18	TRANSISTOR DTC144EU	
Q195	8-729-905-12	TRANSISTOR DTA144EU	
Q196	8-729-905-18	TRANSISTOR DTC144EU	
Q201	8-729-905-35	TRANSISTOR 2SC4081-R	
Q202	8-729-905-12	TRANSISTOR DTA144EU	
Q203	8-729-905-23	TRANSISTOR 2SA1576-R	
Q204	8-729-905-35	TRANSISTOR 2SC4081-R	
Q205	8-729-202-38	TRANSISTOR 2SC3326N	
Q206	8-729-905-35	TRANSISTOR 2SC4081-R	
Q209	8-729-905-18	TRANSISTOR DTC144EU	
Q210	8-729-905-23	TRANSISTOR 2SA1576-R	
Q211	8-729-905-35	TRANSISTOR 2SC4081-R	
Q212	8-729-905-35	TRANSISTOR 2SC4081-R	
Q213	8-729-904-07	TRANSISTOR FMG2	
Q215	8-729-905-23	TRANSISTOR 2SA1576-R	
Q216	8-729-905-18	TRANSISTOR DTC144EU	
Q220	8-729-101-07	TRANSISTOR 2SB798-DL	
Q221	8-729-905-18	TRANSISTOR DTC144EU	
Q222	8-729-905-12	TRANSISTOR DTA144EU	
Q223	8-729-905-35	TRANSISTOR 2SC4081-R	
Q224	8-729-905-35	TRANSISTOR 2SC4081-R	
Q225	8-729-905-12	TRANSISTOR DTA144EU	
Q226	8-729-905-35	TRANSISTOR 2SC4081-R	
Q227	8-729-905-35	TRANSISTOR 2SC4081-R	
Q228	8-729-905-23	TRANSISTOR 2SA1576-R	
Q229	8-729-905-35	TRANSISTOR 2SC4081-R	
Q231	8-729-905-35	TRANSISTOR 2SC4081-R	
Q232	8-729-905-35	TRANSISTOR 2SC4081-R	
Q238	8-729-905-23	TRANSISTOR 2SA1576-R	
Q240	8-729-905-35	TRANSISTOR 2SC4081-R	
Q241	8-729-905-23	TRANSISTOR 2SA1576-R	
Q244	8-729-905-18	TRANSISTOR DTC144EU	
Q245	8-729-905-XX	TRANSISTOR DTC114TU	
Q246	8-729-905-XX	TRANSISTOR DTC114TU	
Q247	8-729-905-XX	TRANSISTOR DTC114TU	
Q248	8-729-905-18	TRANSISTOR DTC144EU	
Q250	8-729-905-35	TRANSISTOR 2SC4081-R	
Q251	8-729-905-18	TRANSISTOR DTC144EU	
Q301	8-729-905-23	TRANSISTOR 2SA1576-R	
Q303	8-729-905-35	TRANSISTOR 2SC4081-R	
Q304	8-729-905-35	TRANSISTOR 2SC4081-R	
Q306	8-729-905-35	TRANSISTOR 2SC4081-R	
Q307	8-729-905-18	TRANSISTOR DTC144EU	
Q308	8-729-905-12	TRANSISTOR DTA144EU	

Ref.No	Part No.	Description	Remark
Q311	8-729-905-35	TRANSISTOR 2SC4081-R	
Q312	8-729-905-12	TRANSISTOR DTA144EU	
Q351	8-729-905-35	TRANSISTOR 2SC4081-R	
Q352	8-729-905-35	TRANSISTOR 2SC4081-R	
Q353	8-729-905-35	TRANSISTOR 2SC4081-R	
Q354	8-729-905-35	TRANSISTOR 2SC4081-R	
Q356	8-729-905-XX	TRANSISTOR DTC114TU	
Q357	8-729-921-58	TRANSISTOR DTA144TU	
Q358	8-729-905-18	TRANSISTOR DTC144EU	
Q359	8-729-102-07	TRANSISTOR 2SC2223-F13	
Q362	8-729-905-18	TRANSISTOR DTC144EU	
Q400	8-729-907-39	TRANSISTOR IMD2	
Q401	8-729-905-XX	TRANSISTOR DTC114TU	
Q406	8-729-402-81	TRANSISTOR XN4501	
Q407	8-729-907-39	TRANSISTOR IMD2	
Q409	8-729-905-XX	TRANSISTOR DTC114TU	
Q411	8-729-216-22	TRANSISTOR 2SA1162	
Q412	8-729-905-18	TRANSISTOR DTC144EU	
Q413	8-729-905-12	TRANSISTOR DTA144EU	
Q417	8-729-905-18	TRANSISTOR DTC144EU	
Q430	8-729-905-18	TRANSISTOR DTC144EU	
Q432	8-729-905-18	TRANSISTOR DTC144EU	

RESISTOR

Ref.No	Part No.	Description				Remark
R001	1-216-839-11	METAL GLAZE	33K	5%	1/16W	
R002	1-216-842-11	METAL GLAZE	56K	5%	1/16W	
R003	1-216-817-11	METAL GLAZE	470	5%	1/16W	
R004	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R005	1-216-825-11	METAL GLAZE	2.2K	5%	1/16W	
R006	1-216-825-11	METAL GLAZE	2.2K	5%	1/16W	
R007	1-216-864-11	METAL GLAZE	0	5%	1/16W	
R011	1-216-809-11	METAL GLAZE	100	5%	1/16W	
R012	1-216-825-11	METAL GLAZE	2.2K	5%	1/16W	
R020	1-216-818-11	METAL GLAZE	560	5%	1/16W	
R021	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R025	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R031	1-216-824-11	METAL GLAZE	1.8K	5%	1/16W	
R032	1-216-864-11	METAL GLAZE	0	5%	1/16W	
R033	1-216-864-11	METAL GLAZE	0	5%	1/16W	
R034	1-216-864-11	METAL GLAZE	0	5%	1/16W	
R036	1-216-824-11	METAL GLAZE	1.8K	5%	1/16W	
R038	1-216-864-11	METAL GLAZE	0	5%	1/16W	
R041	1-216-825-11	METAL GLAZE	2.2K	5%	1/16W	
R042	1-216-824-11	METAL GLAZE	1.8K	5%	1/16W	
R043	1-216-839-11	METAL GLAZE	33K	5%	1/16W	
R044	1-216-837-11	METAL GLAZE	22K	5%	1/16W	
R045	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R047	1-216-825-11	METAL GLAZE	2.2K	5%	1/16W	
R048	1-216-825-11	METAL GLAZE	2.2K	5%	1/16W	
R049	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R050	1-216-825-11	METAL GLAZE	2.2K	5%	1/16W	
R051	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R052	1-216-841-11	METAL GLAZE	47K	5%	1/16W	

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description	Remark
R053	1-216-821-11	METAL GLAZE 1K 5% 1/16W	
R061	1-216-821-11	METAL GLAZE 1K 5% 1/16W	
R062	1-216-847-11	METAL GLAZE 150K 5% 1/16W	
R063	1-216-847-11	METAL GLAZE 150K 5% 1/16W	
R065	1-216-817-11	METAL GLAZE 470 5% 1/16W	
R066	1-216-809-11	METAL GLAZE 100 5% 1/16W	
R071	1-216-661-11	METAL CHIP 2.7K 0.50% 1/10W	
R072	1-216-833-11	METAL GLAZE 10K 5% 1/16W	
R073	1-216-833-11	METAL GLAZE 10K 5% 1/16W	
R074	1-216-809-11	METAL GLAZE 100 5% 1/16W	
R076	1-216-864-11	METAL GLAZE 0 5% 1/16W	
R087	1-216-831-11	METAL GLAZE 6.8K 5% 1/16W	
R088	1-216-833-11	METAL GLAZE 10K 5% 1/16W	
R089	1-216-838-11	METAL GLAZE 27K 5% 1/16W	
R090	1-216-833-11	METAL GLAZE 10K 5% 1/16W	
R092	1-216-830-11	METAL GLAZE 5.6K 5% 1/16W	
R093	1-216-827-11	METAL GLAZE 3.3K 5% 1/16W	
R097	1-216-845-11	METAL GLAZE 100K 5% 1/16W	
R099	1-216-833-11	METAL GLAZE 10K 5% 1/16W	
R101	1-216-833-11	METAL GLAZE 10K 5% 1/16W	
R102	1-216-833-11	METAL GLAZE 10K 5% 1/16W	
R103	1-216-821-11	METAL GLAZE 1K 5% 1/16W	
R104	1-216-811-11	METAL GLAZE 150 5% 1/16W	
R108	1-216-837-11	METAL GLAZE 22K 5% 1/16W	
R109	1-216-839-11	METAL GLAZE 33K 5% 1/16W	
R110	1-216-825-11	METAL GLAZE 2.2K 5% 1/16W	
R111	1-216-818-11	METAL GLAZE 560 5% 1/16W	
R112	1-216-824-11	METAL GLAZE 1.8K 5% 1/16W	
R113	1-216-812-11	METAL GLAZE 180 5% 1/16W	
R114	1-216-834-11	METAL GLAZE 12K 5% 1/16W	
R115	1-216-833-11	METAL GLAZE 10K 5% 1/16W	
R116	1-216-817-11	METAL GLAZE 470 5% 1/16W	
R117	1-216-807-11	METAL GLAZE 68 5% 1/16W	
R118	1-216-829-11	METAL GLAZE 4.7K 5% 1/16W	
R119	1-216-823-11	METAL GLAZE 1.5K 5% 1/16W	
R120	1-216-824-11	METAL GLAZE 1.8K 5% 1/16W	
R122	1-216-864-11	METAL GLAZE 0 5% 1/16W	
R124	1-216-821-11	METAL GLAZE 1K 5% 1/16W	
R125	1-216-836-11	METAL GLAZE 18K 5% 1/16W	
R126	1-216-836-11	METAL GLAZE 18K 5% 1/16W	
R127	1-216-821-11	METAL GLAZE 1K 5% 1/16W	
R128	1-216-864-11	METAL GLAZE 0 5% 1/16W	
R129	1-216-864-11	METAL GLAZE 0 5% 1/16W	
R131	1-216-837-11	METAL GLAZE 22K 5% 1/16W	
R132	1-216-837-11	METAL GLAZE 22K 5% 1/16W	
R133	1-216-817-11	METAL GLAZE 470 5% 1/16W	
R134	1-216-817-11	METAL GLAZE 470 5% 1/16W	
R138	1-216-864-11	METAL GLAZE 0 5% 1/16W	
R140	1-216-821-11	METAL GLAZE 1K 5% 1/16W	
R141	1-216-817-11	METAL GLAZE 470 5% 1/16W	
R142	1-216-817-11	METAL GLAZE 470 5% 1/16W	
R143	1-216-817-11	METAL GLAZE 470 5% 1/16W	
R144	1-216-821-11	METAL GLAZE 1K 5% 1/16W	
R146	1-216-817-11	METAL GLAZE 470 5% 1/16W	
R147	1-216-821-11	METAL GLAZE 1K 5% 1/16W	
R148	1-216-821-11	METAL GLAZE 1K 5% 1/16W	
R149	1-216-821-11	METAL GLAZE 1K 5% 1/16W	
R150	1-216-821-11	METAL GLAZE 1K 5% 1/16W	
R151	1-216-821-11	METAL GLAZE 1K 5% 1/16W	
R152	1-216-821-11	METAL GLAZE 1K 5% 1/16W	
R153	1-216-821-11	METAL GLAZE 1K 5% 1/16W	
R154	1-216-821-11	METAL GLAZE 1K 5% 1/16W	
R155	1-216-821-11	METAL GLAZE 1K 5% 1/16W	
R158	1-216-818-11	METAL GLAZE 560 5% 1/16W	
R159	1-216-837-11	METAL GLAZE 22K 5% 1/16W	
R160	1-216-837-11	METAL GLAZE 22K 5% 1/16W	
R161	1-216-817-11	METAL GLAZE 470 5% 1/16W	
R162	1-216-817-11	METAL GLAZE 470 5% 1/16W	
R163	1-216-864-11	METAL GLAZE 0 5% 1/16W	
R164	1-216-817-11	METAL GLAZE 470 5% 1/16W	
R165	1-216-809-11	METAL GLAZE 100 5% 1/16W	
R166	1-216-821-11	METAL GLAZE 1K 5% 1/16W	
R167	1-216-833-11	METAL GLAZE 10K 5% 1/16W	
R168	1-216-829-11	METAL GLAZE 4.7K 5% 1/16W	
R170	1-216-830-11	METAL GLAZE 5.6K 5% 1/16W	
R171	1-216-825-11	METAL GLAZE 2.2K 5% 1/16W	
R172	1-216-840-11	METAL GLAZE 39K 5% 1/16W	
R173	1-216-835-11	METAL GLAZE 15K 5% 1/16W	
R174	1-216-821-11	METAL GLAZE 1K 5% 1/16W	
R175	1-216-822-11	METAL GLAZE 1.2K 5% 1/16W	
R176	1-216-835-11	METAL GLAZE 15K 5% 1/16W	
R178	1-216-818-11	METAL GLAZE 560 5% 1/16W	
R179	1-216-839-11	METAL GLAZE 33K 5% 1/16W	
R181	1-216-804-11	METAL GLAZE 39 5% 1/16W	
R182	1-216-804-11	METAL GLAZE 39 5% 1/16W	
R183	1-216-807-11	METAL GLAZE 68 5% 1/16W	
R184	1-216-138-00	METAL GLAZE 3.3 5% 1/8W	
R185	1-216-830-11	METAL GLAZE 5.6K 5% 1/16W	
R186	1-216-836-11	METAL GLAZE 18K 5% 1/16W	
R187	1-216-820-11	METAL GLAZE 820 5% 1/16W	
R188	1-216-833-11	METAL GLAZE 10K 5% 1/16W	
R191	1-216-841-11	METAL GLAZE 47K 5% 1/16W	
R192	1-216-841-11	METAL GLAZE 47K 5% 1/16W	
R193	1-216-833-11	METAL GLAZE 10K 5% 1/16W	
R196	1-216-864-11	METAL GLAZE 0 5% 1/16W	
R200	1-216-864-11	METAL GLAZE 0 5% 1/16W	
R201	1-216-822-11	METAL GLAZE 1.2K 5% 1/16W	
R202	1-216-841-11	METAL GLAZE 47K 5% 1/16W	
R203	1-216-814-11	METAL GLAZE 270 5% 1/16W	
R204	1-216-821-11	METAL GLAZE 1K 5% 1/16W	
R206	1-216-821-11	METAL GLAZE 1K 5% 1/16W	
R208	1-216-816-11	METAL GLAZE 390 5% 1/16W	
R209	1-216-814-11	METAL GLAZE 270 5% 1/16W	
R210	1-216-819-11	METAL GLAZE 680 5% 1/16W	
R211	1-216-822-11	METAL GLAZE 1.2K 5% 1/16W	
R212	1-216-830-11	METAL GLAZE 5.6K 5% 1/16W	

When indicating parts by reference number, please include the board name.

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Ref.No	Part No.	Description				Remark
R213	1-216-817-11	METAL GLAZE	470	5%	1/16W	
R214	1-216-820-11	METAL GLAZE	820	5%	1/16W	
R215	1-216-817-11	METAL GLAZE	470	5%	1/16W	
R216	1-216-817-11	METAL GLAZE	470	5%	1/16W	
R219	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R220	1-216-810-11	METAL GLAZE	120	5%	1/16W	
R221	1-216-844-11	METAL GLAZE	82K	5%	1/16W	
R222	1-216-857-11	METAL GLAZE	1M	5%	1/16W	
R225	1-216-839-11	METAL GLAZE	33K	5%	1/16W	
R226	1-216-817-11	METAL GLAZE	470	5%	1/16W	
R227	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R228	1-216-842-11	METAL GLAZE	56K	5%	1/16W	
R229	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R230	1-216-838-11	METAL GLAZE	27K	5%	1/16W	
R231	1-216-825-11	METAL GLAZE	2.2K	5%	1/16W	
R232	1-216-825-11	METAL GLAZE	2.2K	5%	1/16W	
R233	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R234	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R235	1-216-825-11	METAL GLAZE	2.2K	5%	1/16W	
R236	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R237	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R238	1-216-820-11	METAL GLAZE	820	5%	1/16W	
R239	1-216-825-11	METAL GLAZE	2.2K	5%	1/16W	
R241	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R242	1-216-864-11	METAL GLAZE	0	5%	1/16W	
R244	1-216-829-11	METAL GLAZE	4.7K	5%	1/16W	
R245	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R246	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R247	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R248	1-216-841-11	METAL GLAZE	47K	5%	1/16W	
R249	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R250	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R251	1-216-845-11	METAL GLAZE	100K	5%	1/16W	
R252	1-216-853-11	METAL GLAZE	470K	5%	1/16W	
R255	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R256	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R257	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R258	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R259	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R260	1-216-831-11	METAL GLAZE	6.8K	5%	1/16W	
R261	1-216-827-11	METAL GLAZE	3.3K	5%	1/16W	
R262	1-216-832-11	METAL GLAZE	8.2K	5%	1/16W	
R263	1-216-822-11	METAL GLAZE	1.2K	5%	1/16W	
R265	1-216-643-11	METAL CHIP	470	0.50%	1/10W	
R267	1-216-827-11	METAL GLAZE	3.3K	5%	1/16W	
R276	1-216-820-11	METAL GLAZE	820	5%	1/16W	
R278	1-216-820-11	METAL GLAZE	820	5%	1/16W	
R280	1-216-841-11	METAL GLAZE	47K	5%	1/16W	
R281	1-216-824-11	METAL GLAZE	1.8K	5%	1/16W	
R282	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R283	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R284	1-216-825-11	METAL GLAZE	2.2K	5%	1/16W	
R285	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R286	1-216-810-11	METAL GLAZE	120	5%	1/16W	
R287	1-216-813-11	METAL GLAZE	220	5%	1/16W	
R288	1-216-827-11	METAL GLAZE	3.3K	5%	1/16W	
R290	1-216-815-11	METAL GLAZE	330	5%	1/16W	
R291	1-216-815-11	METAL GLAZE	330	5%	1/16W	
R292	1-216-820-11	METAL GLAZE	820	5%	1/16W	
R293	1-216-809-11	METAL GLAZE	100	5%	1/16W	
R294	1-216-839-11	METAL GLAZE	33K	5%	1/16W	
R295	1-216-864-11	METAL GLAZE	0	5%	1/16W	
R296	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R297	1-216-841-11	METAL GLAZE	47K	5%	1/16W	
R298	1-216-831-11	METAL GLAZE	6.8K	5%	1/16W	
R300	1-216-809-11	METAL GLAZE	100	5%	1/16W	
R301	1-216-822-11	METAL GLAZE	1.2K	5%	1/16W	
R302	1-216-822-11	METAL GLAZE	1.2K	5%	1/16W	
R303	1-216-834-11	METAL GLAZE	12K	5%	1/16W	
R304	1-216-838-11	METAL GLAZE	27K	5%	1/16W	
R305	1-216-825-11	METAL GLAZE	2.2K	5%	1/16W	
R308	1-216-827-11	METAL GLAZE	3.3K	5%	1/16W	
R309	1-216-829-11	METAL GLAZE	4.7K	5%	1/16W	
R310	1-216-830-11	METAL GLAZE	5.6K	5%	1/16W	
R311	1-216-830-11	METAL GLAZE	5.6K	5%	1/16W	
R312	1-216-829-11	METAL GLAZE	4.7K	5%	1/16W	
R313	1-216-825-11	METAL GLAZE	2.2K	5%	1/16W	
R314	1-216-830-11	METAL GLAZE	5.6K	5%	1/16W	
R315	1-216-828-11	METAL GLAZE	3.9K	5%	1/16W	
R316	1-216-699-11	METAL CHIP	100K	0.50%	1/10W	
R318	1-216-809-11	METAL GLAZE	100	5%	1/16W	
R319	1-216-864-11	METAL GLAZE	0	5%	1/16W	
R321	1-216-864-11	METAL GLAZE	0	5%	1/16W	
R322	1-216-825-11	METAL GLAZE	2.2K	5%	1/16W	
R323	1-216-825-11	METAL GLAZE	2.2K	5%	1/16W	
R324	1-216-809-11	METAL GLAZE	100	5%	1/16W	
R325	1-216-829-11	METAL GLAZE	4.7K	5%	1/16W	
R326	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R327	1-216-864-11	METAL GLAZE	0	5%	1/16W	
R328	1-216-864-11	METAL GLAZE	0	5%	1/16W	
R331	1-216-823-11	METAL GLAZE	1.5K	5%	1/16W	
R332	1-216-817-11	METAL GLAZE	470	5%	1/16W	
R333	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R334	1-216-829-11	METAL GLAZE	4.7K	5%	1/16W	
R335	1-216-829-11	METAL GLAZE	4.7K	5%	1/16W	
R339	1-216-837-11	METAL GLAZE	22K	5%	1/16W	
R341	1-216-837-11	METAL GLAZE	22K	5%	1/16W	
R342	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R343	1-216-837-11	METAL GLAZE	22K	5%	1/16W	
R346	1-216-864-11	METAL GLAZE	0	5%	1/16W	
R348	1-216-827-11	METAL GLAZE	3.3K	5%	1/16W	
R349	1-216-864-11	METAL GLAZE	0	5%	1/16W	
R350	1-216-825-11	METAL GLAZE	2.2K	5%	1/16W	
R351	1-216-845-11	METAL GLAZE	100K	5%	1/16W	
R352	1-216-845-11	METAL GLAZE	100K	5%	1/16W	
R353	1-216-845-11	METAL GLAZE	100K	5%	1/16W	

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description				Remark
R354	1-216-864-11	METAL GLAZE	0	5%	1/16W	
R355	1-216-829-11	METAL GLAZE	4.7K	5%	1/16W	
R356	1-216-829-11	METAL GLAZE	4.7K	5%	1/16W	
R357	1-216-845-11	METAL GLAZE	100K	5%	1/16W	
R358	1-216-699-11	METAL CHIP	100K	0.50%	1/10W	
R359	1-216-827-11	METAL GLAZE	3.3K	5%	1/16W	
R360	1-216-829-11	METAL GLAZE	4.7K	5%	1/16W	
R361	1-216-832-11	METAL GLAZE	8.2K	5%	1/16W	
R362	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R364	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R365	1-216-825-11	METAL GLAZE	2.2K	5%	1/16W	
R366	1-216-817-11	METAL GLAZE	470	5%	1/16W	
R367	1-216-835-11	METAL GLAZE	15K	5%	1/16W	
R368	1-216-819-11	METAL GLAZE	680	5%	1/16W	
R369	1-216-839-11	METAL GLAZE	33K	5%	1/16W	
R370	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R371	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R372	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R373	1-216-825-11	METAL GLAZE	2.2K	5%	1/16W	
R374	1-216-825-11	METAL GLAZE	2.2K	5%	1/16W	
R375	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R376	1-216-829-11	METAL GLAZE	4.7K	5%	1/16W	
R382	1-216-864-11	METAL GLAZE	0	5%	1/16W	
R392	1-216-837-11	METAL GLAZE	22K	5%	1/16W	
R393	1-216-831-11	METAL GLAZE	6.8K	5%	1/16W	
R394	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R395	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R396	1-216-829-11	METAL GLAZE	4.7K	5%	1/16W	
R397	1-216-841-11	METAL GLAZE	47K	5%	1/16W	
R398	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R399	1-216-864-11	METAL GLAZE	0	5%	1/16W	
R402	1-216-835-11	METAL GLAZE	15K	5%	1/16W	
R407	1-216-839-11	METAL GLAZE	33K	5%	1/16W	
R409	1-216-827-11	METAL GLAZE	3.3K	5%	1/16W	
R410	1-216-825-11	METAL GLAZE	2.2K	5%	1/16W	
R411	1-216-864-11	METAL GLAZE	0	5%	1/16W	
R415	1-216-841-11	METAL GLAZE	47K	5%	1/16W	
R420	1-216-827-11	METAL GLAZE	3.3K	5%	1/16W	
R421	1-216-838-11	METAL GLAZE	27K	5%	1/16W	
R422	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R423	1-216-844-11	METAL GLAZE	82K	5%	1/16W	
R424	1-216-864-11	METAL GLAZE	0	5%	1/16W	
R426	1-216-864-11	METAL GLAZE	0	5%	1/16W	
R427	1-216-864-11	METAL GLAZE	0	5%	1/16W	
R430	1-216-864-11	METAL GLAZE	0	5%	1/16W	
R433	1-216-826-11	METAL GLAZE	2.7K	5%	1/16W	
R440	1-216-802-11	METAL GLAZE	27	5%	1/16W	
R441	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R446	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R447	1-216-841-11	METAL GLAZE	47K	5%	1/16W	
R473	1-216-814-11	METAL GLAZE	270	5%	1/16W	
R474	1-216-829-11	METAL GLAZE	4.7K	5%	1/16W	
R485	1-216-864-11	METAL GLAZE	0	5%	1/16W	
R489	1-216-864-11	METAL GLAZE	0	5%	1/16W	
R491	1-216-864-11	METAL GLAZE	0	5%	1/16W	
R600	1-216-864-11	METAL GLAZE	0	5%	1/16W	
R601	1-216-864-11	METAL GLAZE	0	5%	1/16W	
R602	1-216-822-11	METAL GLAZE	1.2K	5%	1/16W	
R605	1-216-841-11	METAL GLAZE	47K	5%	1/16W	

VARIABLE RESISTOR

Ref.No	Part No.	Description	Remark
RV101	1-238-086-11	RES, ADJ CERMET 470	
RV201	1-238-091-11	RES, ADJ CERMET 22K	
RV202	1-238-087-11	RES, ADJ CERMET 1K	
RV203	1-238-088-11	RES, ADJ, CERMET 2.2K	
RV204	1-238-087-11	RES, ADJ CERMET 1K	
RV205	1-238-091-11	RES, ADJ CERMET 22K	
RV206	1-238-088-11	RES, ADJ, CERMET 2.2K	
RV207	1-238-089-11	RES, ADJ CERMET 4.7K	
RV210	1-238-088-11	RES, ADJ, CERMET 2.2K	
RV211	1-238-092-11	RES, ADJ CERMET 47K	
RV301	1-238-086-11	RES, ADJ CERMET 470	
RV351	1-238-090-11	RES, ADJ CERMET 10K	
RV353	1-238-087-11	RES, ADJ CERMET 1K	

SWITCH

Ref.No	Part No.	Description	Remark
S201	1-572-275-11	SWITCH, SLIDE (IN/OUT) (E/AU MODEL)	

CRYSTAL

Ref.No	Part No.	Description	Remark
X301	1-577-117-21	VIBRATOR, CRYSTAL	

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Ref.No	Part No.	Description	Remark
	*A-7062-273-A	CT-21P BOARD, COMPLETE (Ref.No 1,000 Series) ***********************	
	1-633-979-11	FP-299 FLEXIBLE BOARD	
	3-744-842-01	SUPPORT, CT PC BOARD	

CAPACITOR

Ref.No	Part No.	Description				Remark
C700	1-162-974-11	CERAMIC CHIP	0.01MF		50V	
C701	1-162-974-11	CERAMIC CHIP	0.01MF		50V	
C702	1-128-020-11	ELECT CHIP	10MF	0	6.3V	
C703	1-163-038-00	CERAMIC CHIP	0.1MF		25V	
C704	1-162-974-11	CERAMIC CHIP	0.01MF		50V	
C706	1-135-177-21	TANTAL. CHIP	1MF	20%	25V	
C709	1-163-038-00	CERAMIC CHIP	0.1MF		25V	
C710	1-128-020-11	ELECT CHIP	10MF	0	6.3V	
C711	1-163-038-00	CERAMIC CHIP	0.1MF		25V	
C717	1-128-015-11	ELECT CHIP	22MF	0	4V	
C718	1-128-015-11	ELECT CHIP	22MF	0	4V	
C720	1-162-974-11	CERAMIC CHIP	0.01MF		50V	
C721	1-135-157-21	TANTAL. CHIP	10MF	20%	6.3V	
C723	1-162-974-11	CERAMIC CHIP	0.01MF		50V	
C724	1-162-974-11	CERAMIC CHIP	0.01MF		50V	
C726	1-162-974-11	CERAMIC CHIP	0.01MF		50V	

When indicating parts by reference number, please include the board name.

CT-21P

Ref.No	Part No.	Description		Remark
C727	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C728	1-128-020-11	ELECT CHIP 10MF	0	6.3V
C729	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C730	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C734	1-135-157-21	TANTAL. CHIP 10MF	20%	6.3V
C735	1-164-156-11	CERAMIC CHIP 0.1MF		25V
C736	1-162-638-11	CERAMIC CHIP 1MF		16V
C737	1-164-156-11	CERAMIC CHIP 0.1MF		25V
C738	1-164-156-11	CERAMIC CHIP 0.1MF		25V
C739	1-164-156-11	CERAMIC CHIP 0.1MF		25V
C740	1-164-156-11	CERAMIC CHIP 0.1MF		25V
C741	1-162-918-11	CERAMIC CHIP 18PF	5%	50V
C742	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C743	1-164-156-11	CERAMIC CHIP 0.1MF		25V
C744	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C745	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C746	1-164-227-11	CERAMIC CHIP 0.022MF	10%	25V
C747	1-164-227-11	CERAMIC CHIP 0.022MF	10%	25V
C748	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C749	1-135-145-11	TANTAL. CHIP 0.47MF	20%	35V
C751	1-135-179-21	TANTAL. CHIP 2.2MF	20%	16V
C752	1-162-970-11	CERAMIC CHIP 0.01MF	10%	25V
C753	1-162-915-11	CERAMIC CHIP 10PF	0.5PF	50V
C754	1-162-958-11	CERAMIC CHIP 270PF	5%	50V
C755	1-162-958-11	CERAMIC CHIP 270PF	5%	50V
C756	1-162-638-11	CERAMIC CHIP 1MF		16V
C757	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C758	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C759	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C760	1-162-916-11	CERAMIC CHIP 12PF	5%	50V
C761	1-162-917-11	CERAMIC CHIP 15PF	5%	50V
C763	1-162-927-11	CERAMIC CHIP 100PF	5%	50V
C769	1-128-049-11	ELECT CHIP 1MF	0	50V
C770	1-131-352-00	ELECT(SOLID) 6.8MF	20%	6.3V
C773	1-163-809-11	CERAMIC CHIP 0.047MF	10%	25V
C774	1-162-965-11	CERAMIC CHIP 0.0015MF	10%	50V
C799	1-135-178-11	TANTAL. CHIP 1.5MF	20%	20V
C901	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C902	1-135-157-21	TANTAL. CHIP 10MF	20%	6.3V
C903	1-162-947-11	CERAMIC CHIP 33PF	5%	50V
C904	1-162-962-11	CERAMIC CHIP 470PF	10%	50V
C905	1-162-997-11	CERAMIC CHIP 10PF	0.5PF	50V
C906	1-163-123-00	CERAMIC CHIP 180PF	5%	50V
C907	1-162-964-11	CERAMIC CHIP 0.001MF	10%	50V
C908	1-162-964-11	CERAMIC CHIP 0.001MF	10%	50V
C909	1-162-970-11	CERAMIC CHIP 0.01MF	10%	25V
C910	1-164-156-11	CERAMIC CHIP 0.1MF		25V
C911	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C930	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C931	1-135-178-11	TANTAL. CHIP 1.5MF	20%	20V

CONNECTOR

Ref.No	Part No.	Description	Remark
CN705	1-568-336-11	CONNECTOR, BOARD TO BOARD 20P	

Ref.No	Part No.	Description	Remark

TRIMMER

Ref.No	Part No.	Description	Remark
CT701	1-141-311-11	CAP, VAR, TRIMMER (CHIP)	
CT702	1-141-331-11	CAP, VAR, TRIMMER (CHIP)	
CT901	1-141-331-11	CAP, VAR, TRIMMER (CHIP)	
CT902	1-141-417-11	CAP, ADJ	

DIODE

Ref.No	Part No.	Description	Remark
D901	8-719-949-46	DIODE 1T32	
D903	8-719-404-46	DIODE MA110	
D904	8-719-404-46	DIODE MA110	
D905	8-719-404-46	DIODE MA110	
D906	8-719-404-46	DIODE MA110	

IC

Ref.No	Part No.	Description	Remark
IC701	8-759-998-30	IC CF79028PG	
IC702	8-759-504-54	IC MB8464A-15LLPF-EL	
IC703	8-752-039-49	IC CXA1393AN	
IC704	8-759-634-47	IC M51285BGP	
IC707	8-759-710-29	IC NJM2235M	
IC708	8-759-710-86	IC NJM2233BM	
IC709	8-759-710-86	IC NJM2233BM	
IC713	8-759-234-20	IC TC7S08F	
IC901	8-759-970-80	IC MB673198U	
IC902	8-759-148-62	IC UPD6451GT-630-T1	

COIL

Ref.No	Part No.	Description	Remark
L700	1-412-028-11	INDUCTOR CHIP 4.7UH	
L701	1-410-386-11	INDUCTOR CHIP 27UH	
L702	1-412-028-11	INDUCTOR CHIP 4.7UH	
L703	1-412-028-11	INDUCTOR CHIP 4.7UH	
L704	1-412-032-11	INDUCTOR CHIP 100UH	
L705	1-412-028-11	INDUCTOR CHIP 4.7UH	
L901	1-412-032-11	INDUCTOR CHIP 100UH	
L902	1-412-143-11	MICRO INDUCTOR 30UH	
L903	1-412-282-41	INDUCTOR 470UH	

TRANSISTOR

Ref.No	Part No.	Description	Remark
Q701	8-729-925-91	TRANSISTOR DTC115EU	
Q702	8-729-420-16	TRANSISTOR XN1214	
Q703	8-729-905-18	TRANSISTOR DTC144EU	
Q704	8-729-905-35	TRANSISTOR 2SC4081-R	
Q705	8-729-905-23	TRANSISTOR 2SA1576-R	
Q706	8-729-905-18	TRANSISTOR DTC144EU	
Q707	8-729-905-35	TRANSISTOR 2SC4081-R	
Q708	8-729-905-15	TRANSISTOR DTC144WU	
Q709	8-729-905-35	TRANSISTOR 2SC4081-R	
Q710	8-729-905-35	TRANSISTOR 2SC4081-R	
Q720	8-729-905-18	TRANSISTOR DTC144EU	
Q726	8-729-905-23	TRANSISTOR 2SA1576-R	
Q727	8-729-905-35	TRANSISTOR 2SC4081-R	
Q728	8-729-905-35	TRANSISTOR 2SC4081-R	
Q729	8-729-905-18	TRANSISTOR DTC144EU	
Q730	8-729-905-12	TRANSISTOR DTA144EU	

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description	Remark
Q800	8-729-905-18	TRANSISTOR DTC144EU	
Q801	8-729-905-23	TRANSISTOR 2SA1576	

RESISTOR

Ref.No	Part No.	Description				Remark
R700	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R702	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R704	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R706	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R708	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R711	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R713	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R715	1-216-825-11	METAL GLAZE	2.2K	5%	1/16W	
R716	1-216-829-11	METAL GLAZE	4.7K	5%	1/16W	
R720	1-216-864-11	METAL GLAZE	0	5%	1/16W	
R722	1-216-817-11	METAL GLAZE	470	5%	1/16W	
R723	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R724	1-216-845-11	METAL GLAZE	100K	5%	1/16W	
R725	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R729	1-216-864-11	METAL GLAZE	0	5%	1/16W	
R731	1-216-847-11	METAL GLAZE	150K	5%	1/16W	
R732	1-216-847-11	METAL GLAZE	150K	5%	1/16W	
R734	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R735	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R736	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R737	1-216-841-11	METAL GLAZE	47K	5%	1/16W	
R741	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R742	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R745	1-216-845-11	METAL GLAZE	100K	5%	1/16W	
R746	1-216-847-11	METAL GLAZE	150K	5%	1/16W	
R747	1-216-829-11	METAL GLAZE	4.7K	5%	1/16W	
R748	1-216-829-11	METAL GLAZE	4.7K	5%	1/16W	
R749	1-216-837-11	METAL GLAZE	22K	5%	1/16W	
R750	1-216-838-11	METAL GLAZE	27K	5%	1/16W	
R751	1-216-825-11	METAL GLAZE	2.2K	5%	1/16W	
R753	1-216-825-11	METAL GLAZE	2.2K	5%	1/16W	
R754	1-216-825-11	METAL GLAZE	2.2K	5%	1/16W	
R755	1-216-829-11	METAL GLAZE	4.7K	5%	1/16W	
R757	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R758	1-216-823-11	METAL GLAZE	1.5K	5%	1/16W	
R759	1-216-806-11	METAL GLAZE	56	5%	1/16W	
R760	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R761	1-216-814-11	METAL GLAZE	270	5%	1/16W	
R762	1-216-845-11	METAL GLAZE	100K	5%	1/16W	
R763	1-216-843-11	METAL GLAZE	68K	5%	1/16W	
R764	1-216-832-11	METAL GLAZE	8.2K	5%	1/16W	
R766	1-216-857-11	METAL GLAZE	1M	5%	1/16W	
R770	1-216-864-11	METAL GLAZE	0	5%	1/16W	
R772	1-216-864-11	METAL GLAZE	0	5%	1/16W	
R776	1-216-818-11	METAL GLAZE	560	5%	1/16W	
R777	1-216-824-11	METAL GLAZE	1.8K	5%	1/16W	
R780	1-216-830-11	METAL GLAZE	5.6K	5%	1/16W	
R781	1-216-836-11	METAL GLAZE	18K	5%	1/16W	
R782	1-216-828-11	METAL GLAZE	3.9K	5%	1/16W	

Ref.No	Part No.	Description				Remark
R783	1-216-832-11	METAL GLAZE	8.2K	5%	1/16W	
R784	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R787	1-216-822-11	METAL GLAZE	1.2K	5%	1/16W	
R788	1-216-822-11	METAL GLAZE	1.2K	5%	1/16W	
R789	1-216-829-11	METAL GLAZE	4.7K	5%	1/16W	
R793	1-216-831-11	METAL GLAZE	6.8K	5%	1/16W	
R795	1-216-864-11	METAL GLAZE	0	5%	1/16W	
R796	1-216-827-11	METAL GLAZE	3.3K	5%	1/16W	
R797	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R798	1-216-829-11	METAL GLAZE	4.7K	5%	1/16W	
R901	1-216-864-11	METAL GLAZE	0	5%	1/16W	
R902	1-216-864-11	METAL GLAZE	0	5%	1/16W	
R903	1-216-864-11	METAL GLAZE	0	5%	1/16W	
R904	1-216-825-11	METAL GLAZE	2.2K	5%	1/16W	
R905	1-216-845-11	METAL GLAZE	100K	5%	1/16W	
R906	1-216-845-11	METAL GLAZE	100K	5%	1/16W	
R907	1-216-839-11	METAL GLAZE	33K	5%	1/16W	
R908	1-216-845-11	METAL GLAZE	100K	5%	1/16W	
R909	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R911	1-216-838-11	METAL GLAZE	27K	5%	1/16W	
R912	1-216-864-11	METAL GLAZE	0	5%	1/16W	
R913	1-216-829-11	METAL GLAZE	4.7K	5%	1/16W	
R914	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R915	1-216-830-11	METAL GLAZE	5.6K	5%	1/16W	
R916	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R917	1-216-842-11	METAL GLAZE	56K	5%	1/16W	
R918	1-216-834-11	METAL GLAZE	12K	5%	1/16W	
R919	1-216-864-11	METAL GLAZE	0	5%	1/16W	
R920	1-216-828-11	METAL GLAZE	3.9K	5%	1/16W	
R921	1-216-825-11	METAL GLAZE	2.2K	5%	1/16W	
R923	1-216-824-11	METAL GLAZE	1.8K	5%	1/16W	
R924	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R925	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R926	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R927	1-216-864-11	METAL GLAZE	0	5%	1/16W	
R930	1-216-864-11	METAL GLAZE	0	5%	1/16W	
R932	1-216-864-11	METAL GLAZE	0	5%	1/16W	
R933	1-216-841-11	METAL GLAZE	47K	5%	1/16W	
R934	1-216-840-11	METAL GLAZE	39K	5%	1/16W	
R959	1-216-829-11	METAL GLAZE	4.7K	5%	1/16W	
R960	1-216-825-11	METAL GLAZE	2.2K	5%	1/16W	
R961	1-216-825-11	METAL GLAZE	2.2K	5%	1/16W	
R962	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R963	1-216-815-11	METAL GLAZE	330	5%	1/16W	
R964	1-216-825-11	METAL GLAZE	2.2K	5%	1/16W	
R965	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R966	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R967	1-216-825-11	METAL GLAZE	2.2K	5%	1/16W	
R968	1-216-814-11	METAL GLAZE	270	5%	1/16W	
R969	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R970	1-216-823-11	METAL GLAZE	1.5K	5%	1/16W	
R976	1-216-829-11	METAL GLAZE	4.7K	5%	1/16W	
R977	1-216-829-11	METAL GLAZE	4.7K	5%	1/16W	

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description	Remark
R978	1-216-833-11	METAL GLAZE 10K 5% 1/16W	
R979	1-216-864-11	METAL GLAZE 0 5% 1/16W	
R982	1-216-809-11	METAL GLAZE 100 5% 1/16W	
R983	1-216-809-11	METAL GLAZE 100 5% 1/16W	
R984	1-216-809-11	METAL GLAZE 100 5% 1/16W	
		VARIABLE RESISTOR	
RV702	1-238-089-11	RES, ADJ CERMET 4.7K	
RV703	1-238-092-11	RES, ADJ CERMET 47K	
		THERMISTER	
TH700	1-800-071-XX	THERMISTER, S-300	
		CRYSTAL	
X701	1-567-733-11	VIBRATOR, CRYSTAL (14.3MHz)	
X703	1-578-690-11	VIBRATOR, CERAMIC (500KHz)	
**			
	*A-7062-277-A	DK-6P BOARD, COMPLETE (Ref.No 5,000 Series) **********************	
	1-633-984-11	FP-297 FLEXIBLE BOARD	
		CAPACITOR	
C950	1-163-038-00	CERAMIC CHIP 0.1MF	25V
C951	1-163-003-11	CERAMIC CHIP 330PF 10%	50V
C952	1-163-005-11	CERAMIC CHIP 470PF 10%	50V
		CONNECTOR	
CN950	1-569-478-21	CONNECTOR, FPC 20P	
		IC	
IC950	8-759-145-63	IC UPD7564G-540	
		TRANSISTOR	
Q950	8-729-901-01	TRANSISTOR DTC144EK	
		RESISTOR	
R950	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R951	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R952	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R953	1-216-089-00	METAL GLAZE 47K 5% 1/10W	
R954	1-216-035-00	METAL GLAZE 270 5% 1/10W	
R955	1-216-025-00	METAL GLAZE 100 5% 1/10W	
		SWITCH	
S950	1-571-684-11	SWITCH, TACTIL (SUPERIMPOSE)	
S952	1-571-684-11	SWITCH, TACTIL (COLOR/MODE)	
S953	1-571-684-11	SWITCH, TACTIL (MEMORY)	
		CRYSTAL	
X950	1-567-884-11	OSCILLATOR, CERAMIC (700KHz)	

Ref.No	Part No.	Description	Remark
	*1-633-935-21	CK-40P BOARD (Ref.No 5,000 Series) *************	
	1-633-985-11	FP-298 FLEXIBLE BOARD	
	3-712-410-01	HOLDER, RS	
		CAPACITOR	
C670	1-163-038-00	CERAMIC CHIP 0.1MF	25V
		CONNECTOR	
CN670	1-565-874-11	PIN, CONNECTOR (PC BOARD) 2P	
		DIODE	
D670	8-719-420-36	DIODE MA151A	
D671	8-719-940-45	DIODE MA159	
		TRANSISTOR	
Q670	8-729-120-12	TRANSISTOR 2SC1623	
Q671	8-719-939-11	TRANSISTOR GP2S09-B	
Q672	8-729-805-61	TRANSISTOR 2SC3395-TB	
		RESISTOR	
R670	1-216-041-00	METAL GLAZE 470 5% 1/10W	
R671	1-216-017-00	METAL GLAZE 47 5% 1/10W	
R672	1-216-089-00	METAL GLAZE 47K 5% 1/10W	
R673	1-216-093-00	METAL GLAZE 68K 5% 1/10W	
		SWITCH	
S670	1-571-684-11	SWITCH, TACTIL (SHUTTER SPEED)	
S671	1-571-684-11	SWITCH, TACTIL (FOCUS)	
S672	1-571-684-11	SWITCH, TACTIL (BACK LIGHT)	
S673	1-571-684-11	SWITCH, TACTIL (PUSH AUTO)	
S674	1-571-684-11	SWITCH, TACTIL (WHT BAL)	
**			
	*1-633-932-21	ED-20P BOARD (Ref.No 5,000 Series) *************	
		DIODE	
D920	8-719-941-34	DIODE GL1HD51	
		SWITCH	
S920	1-571-684-11	SWITCH, TACTIL (EDITSEARCH -)	
S921	1-571-684-11	SWITCH, TACTIL (EDITSEARCH +)	
		CONNECTOR	
W922	*1-566-095-11	PIN, BOARD TO BOARD 6P	
**			

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description			Remark
	*1-633-937-21	RM-23P BOARD (Ref.No 7,000 Series)			
		*************			
		IC			
IC960	8-749-921-76	IC GP1U56			
		RESISTOR			
R960	1-216-295-00	METAL GLAZE	0	5%	1/10W

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Ref.No	Part No.	Description			Remark
	*1-633-939-21	ZK-10P BOARD (Ref.No 7,000 Series)			
		*************			
		SWITCH			
S680	1-571-684-11	SWITCH, TACTIL (MACRO AF)			
S681	1-571-684-11	SWITCH, TACTIL (FADER)			

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Ref.No	Part No.	Description			Remark
	*A-7062-268-A	VC-67P BOARD, COMPLETE (Ref.No 1,000 Series)			
		***********************			
	A-7068-180-A	MX-12P BOARD, COMPLETE (HIC)			
		CAPACITOR			
C302	1-162-974-11	CERAMIC CHIP	0.01MF		50V
C401	1-164-234-11	CERAMIC CHIP	1MF		10V
C402	1-164-234-11	CERAMIC CHIP	1MF		10V
C403	1-164-156-11	CERAMIC CHIP	0.1MF		25V
C404	1-164-234-11	CERAMIC CHIP	1MF		10V
C406	1-164-156-11	CERAMIC CHIP	0.1MF		25V
C407	1-164-234-11	CERAMIC CHIP	1MF		10V
C408	1-162-964-11	CERAMIC CHIP	0.001MF	10%	50V
C409	1-164-156-11	CERAMIC CHIP	0.1MF		25V
C410	1-162-974-11	CERAMIC CHIP	0.01MF		50V
C411	1-124-566-11	ELECT	120MF	20%	6.3V
C412	1-162-974-11	CERAMIC CHIP	0.01MF		50V
C413	1-164-234-11	CERAMIC CHIP	1MF		10V
C414	1-162-917-11	CERAMIC CHIP	15PF	5%	50V
C415	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C416	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C417	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C419	1-162-964-11	CERAMIC CHIP	0.001MF	10%	50V
C501	1-126-205-11	ELECT CHIP	47MF	20%	6.3V
C502	1-162-974-11	CERAMIC CHIP	0.01MF		50V
C503	1-164-234-11	CERAMIC CHIP	1MF		10V
C506	1-164-156-11	CERAMIC CHIP	0.1MF		25V
C507	1-162-974-11	CERAMIC CHIP	0.01MF		50V
C508	1-135-072-21	TANTAL. CHIP	0.22MF	20%	35V
C509	1-162-970-11	CERAMIC CHIP	0.01MF	10%	25V
C510	1-128-004-11	ELECT CHIP	10MF	20%	16V
C511	1-135-180-21	TANTAL. CHIP	3.3MF	20%	6.3V
C512	1-135-180-21	TANTAL. CHIP	3.3MF	20%	6.3V
C513	1-135-180-21	TANTAL. CHIP	3.3MF	20%	6.3V
C514	1-164-156-11	CERAMIC CHIP	0.1MF		25V
C517	1-135-181-21	TANTAL. CHIP	4.7MF	20%	6.3V
C518	1-164-156-11	CERAMIC CHIP	0.1MF		25V
C519	1-164-156-11	CERAMIC CHIP	0.1MF		25V
C520	1-135-071-21	TANTAL. CHIP	0.15MF	10%	35V
C521	1-135-177-21	TANTAL. CHIP	1MF	20%	20V
C651	1-126-217-11	ELECT CHIP	15MF	20%	10V
C654	1-162-970-11	CERAMIC CHIP	0.01MF	10%	25V
C655	1-162-970-11	CERAMIC CHIP	0.01MF	10%	25V
C656	1-162-970-11	CERAMIC CHIP	0.01MF	10%	25V
C657	1-162-974-11	CERAMIC CHIP	0.01MF		50V
C658	1-128-004-11	ELECT CHIP	10MF	20%	16V
C659	1-164-156-11	CERAMIC CHIP	0.1MF		25V
C660	1-164-156-11	CERAMIC CHIP	0.1MF		25V
C661	1-164-005-11	CERAMIC CHIP	0.47MF		25V
C662	1-162-964-11	CERAMIC CHIP	0.001MF	10%	50V
C663	1-164-156-11	CERAMIC CHIP	0.1MF		25V
C664	1-162-974-11	CERAMIC CHIP	0.01MF		50V
C665	1-162-974-11	CERAMIC CHIP	0.01MF		50V
C666	1-162-974-11	CERAMIC CHIP	0.01MF		50V
C667	1-164-156-11	CERAMIC CHIP	0.1MF		25V
		CONNECTOR			
CN301	1-568-338-11	CONNECTOR, BOARD TO BOARD 24P			
CN302	1-568-331-11	CONNECTOR, BOARD TO BOARD 10P			
CN303	1-566-533-11	CONNECTOR, FPC (ZIF) 17P			
CN304	*1-566-184-11	PIN, CONNECTOR (PC BOARD) 5P			
CN305	1-566-528-21	CONNECTOR, FPC (ZIF) 12P			
CN306	1-565-528-21	PIN, CONNECTOR (PC BOARD) 3P			
CN307	*1-565-876-11	PIN, CONNECTOR (PC BOARD) 4P			
CN308	*1-565-541-11	PIN, CONNECTOR (PC BOARD) 2P			
CN651	*1-566-187-11	PIN, CONNECTOR (PC BOARD) 8P			
CN652	1-565-527-11	PIN, CONNECTOR (PC BOARD) 2P			
CN653	1-565-527-11	PIN, CONNECTOR (PC BOARD) 2P			
CN654	*1-565-529-21	PIN, CONNECTOR (PC BOARD) 4P			
CN655	*1-566-184-11	PIN, CONNECTOR (PC BOARD) 5P			
		DIODE			
D501	8-719-404-46	DIODE MA110			
D502	8-719-404-46	DIODE MA110			
D503	8-719-404-46	DIODE MA110			
D504	8-719-404-46	DIODE MA110			
		FILTER			
FL301	1-236-759-21	FILTER, LOW PASS (TRAP)			
FL302	1-415-731-21	DELAY LINE, LC (YH)			
FL303	1-415-732-21	DELAY LINE, LC (200NS)			
FL401	1-415-730-21	DELAY LINE, LC (100NS)			
		IC			
IC301	8-759-946-00	IC MB88341PFV			
IC401	8-752-038-XX	IC CXA1392R			

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description	Remark
IC501	8-759-037-58	IC MC68HC11E9FUSC400217	
IC502	8-759-010-13	IC MC14028BF	
IC504	8-759-946-00	IC MB88341PFV	
IC505	8-759-998-96	IC LM324DR	
IC507	8-759-030-74	IC SC14S66F	
IC508	8-759-937-56	IC S-8054ALB-LM-S	
IC509	8-759-932-54	IC MC14066BF	
IC510	8-759-998-96	IC LM324DR	
IC651	8-759-981-82	IC RC3414M	
IC652	8-759-037-20	IC MPC1737M	
IC653	8-759-998-98	IC LM358D	
IC655	8-759-009-07	IC MC14053BF	
IC656	8-759-998-96	IC LM324D	
		COIL	
L401	1-410-391-11	INDUCTOR CHIP 68UH	
L502	1-412-060-11	INDUCTOR CHIP 22UH	
L503	1-412-062-11	INDUCTOR CHIP 47UH	
		TRANSISTOR	
Q301	8-729-905-23	TRANSISTOR 2SA1576-R	
Q302	8-729-905-23	TRANSISTOR 2SA1576-R	
Q303	8-729-402-84	TRANSISTOR XN4601	
Q401	8-729-402-84	TRANSISTOR XN4601	
Q402	8-729-402-84	TRANSISTOR XN4601	
Q403	8-729-905-23	TRANSISTOR 2SA1576-R	
Q404	8-729-905-35	TRANSISTOR 2SC4081-R	
Q501	8-729-420-50	TRANSISTOR UN5215	
Q502	8-729-420-50	TRANSISTOR UN5215	
Q503	8-729-420-50	TRANSISTOR UN5215	
Q504	8-729-403-10	TRANSISTOR XN6215	
Q505	8-729-403-10	TRANSISTOR XN6215	
Q506	8-729-420-07	TRANSISTOR XN6213	
Q507	8-729-420-50	TRANSISTOR UN5215	
Q508	8-729-402-78	TRANSISTOR XN6401	
Q509	8-729-403-10	TRANSISTOR XN6215	
Q510	8-729-905-35	TRANSISTOR 2SC4081-R	
Q513	8-729-402-84	TRANSISTOR XN4601	
Q514	8-729-905-35	TRANSISTOR 2SC4081-R	
Q515	8-729-402-84	TRANSISTOR XN4601	
Q516	8-729-905-35	TRANSISTOR 2SC4081-R	
Q517	8-729-905-23	TRANSISTOR 2SA1576-R	
Q651	8-729-905-23	TRANSISTOR 2SA1576-R	
Q652	8-729-402-42	TRANSISTOR UN5213	
Q653	8-729-920-79	TRANSISTOR 2SB1132-T100-QR	
Q654	8-729-905-35	TRANSISTOR 2SC4081-R	
Q655	8-729-905-35	TRANSISTOR 2SC4081-R	
Q656	8-729-905-35	TRANSISTOR 2SC4081-R	
Q657	8-729-402-84	TRANSISTOR XN4601	
Q658	8-729-402-84	TRANSISTOR XN4601	
		RESISTOR	
R302	1-216-820-11	METAL GLAZE 820 5% 1/16W	

Ref.No	Part No.	Description	Remark
R304	1-216-821-11	METAL GLAZE 1K 5% 1/16W	
R307	1-216-829-11	METAL GLAZE 4.7K 5% 1/16W	
R310	1-216-825-11	METAL GLAZE 2.2K 5% 1/16W	
R311	1-216-821-11	METAL GLAZE 1K 5% 1/16W	
R312	1-216-836-11	METAL GLAZE 18K 5% 1/16W	
R313	1-216-837-11	METAL GLAZE 22K 5% 1/16W	
R314	1-216-839-11	METAL GLAZE 33K 5% 1/16W	
R315	1-216-839-11	METAL GLAZE 33K 5% 1/16W	
R316	1-216-839-11	METAL GLAZE 33K 5% 1/16W	
R317	1-216-836-11	METAL GLAZE 18K 5% 1/16W	
R318	1-216-833-11	METAL GLAZE 10K 5% 1/16W	
R321	1-216-833-11	METAL GLAZE 10K 5% 1/16W	
R322	1-216-825-11	METAL GLAZE 2.2K 5% 1/16W	
R325	1-216-829-11	METAL GLAZE 4.7K 5% 1/16W	
R327	1-216-864-11	METAL GLAZE 0 5% 1/16W	
R328	1-216-864-11	METAL GLAZE 0 5% 1/16W	
R329	1-216-817-11	METAL GLAZE 470 5% 1/16W	
R402	1-216-833-11	METAL GLAZE 10K 5% 1/16W	
R406	1-216-864-11	METAL GLAZE 0 5% 1/16W	
R407	1-216-821-11	METAL GLAZE 1K 5% 1/16W	
R410	1-216-864-11	METAL GLAZE 0 5% 1/16W	
R414	1-216-864-11	METAL GLAZE 0 5% 1/16W	
R415	1-216-820-11	METAL GLAZE 820 5% 1/16W	
R416	1-216-817-11	METAL GLAZE 470 5% 1/16W	
R417	1-216-833-11	METAL GLAZE 10K 5% 1/16W	
R418	1-216-833-11	METAL GLAZE 10K 5% 1/16W	
R419	1-216-825-11	METAL GLAZE 2.2K 5% 1/16W	
R420	1-216-825-11	METAL GLAZE 2.2K 5% 1/16W	
R421	1-216-821-11	METAL GLAZE 1K 5% 1/16W	
R422	1-216-837-11	METAL GLAZE 22K 5% 1/16W	
R427	1-216-841-11	METAL GLAZE 47K 5% 1/16W	
R428	1-216-835-11	METAL GLAZE 15K 5% 1/16W	
R429	1-216-839-11	METAL GLAZE 33K 5% 1/16W	
R432	1-216-839-11	METAL GLAZE 33K 5% 1/16W	
R435	1-216-833-11	METAL GLAZE 10K 5% 1/16W	
R437	1-216-825-11	METAL GLAZE 2.2K 5% 1/16W	
R435	1-216-833-11	METAL GLAZE 10K 5% 1/16W	
R437	1-216-825-11	METAL GLAZE 2.2K 5% 1/16W	
R440	1-216-295-11	METAL GLAZE 0 5% 1/16W	
R501	1-216-837-11	METAL GLAZE 22K 5% 1/16W	
R502	1-216-837-11	METAL GLAZE 22K 5% 1/16W	
R503	1-216-833-11	METAL GLAZE 10K 5% 1/16W	
R504	1-216-833-11	METAL GLAZE 10K 5% 1/16W	
R506	1-216-829-11	METAL GLAZE 4.7K 5% 1/16W	
R508	1-216-833-11	METAL GLAZE 10K 5% 1/16W	
R509	1-216-833-11	METAL GLAZE 10K 5% 1/16W	
R510	1-216-833-11	METAL GLAZE 10K 5% 1/16W	
R511	1-216-833-11	METAL GLAZE 10K 5% 1/16W	
R513	1-216-845-11	METAL GLAZE 100K 5% 1/16W	
R514	1-216-833-11	METAL GLAZE 10K 5% 1/16W	
R515	1-216-857-11	METAL GLAZE 1M 5% 1/16W	
R517	1-216-833-11	METAL GLAZE 10K 5% 1/16W	
R518	1-216-833-11	METAL GLAZE 10K 5% 1/16W	

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description				Remark
R519	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R520	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R521	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R522	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R523	1-216-840-11	METAL GLAZE	39K	5%	1/16W	
R524	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R525	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R526	1-216-847-11	METAL GLAZE	150K	5%	1/16W	
R527	1-216-845-11	METAL GLAZE	100K	5%	1/16W	
R528	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R529	1-216-845-11	METAL GLAZE	100K	5%	1/16W	
R530	1-216-845-11	METAL GLAZE	100K	5%	1/16W	
R531	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R532	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R533	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R534	1-216-837-11	METAL GLAZE	22K	5%	1/16W	
R535	1-216-825-11	METAL GLAZE	2.2K	5%	1/16W	
R536	1-216-823-11	METAL GLAZE	1.5K	5%	1/16W	
R537	1-216-845-11	METAL GLAZE	100K	5%	1/16W	
R546	1-216-829-11	METAL GLAZE	4.7K	5%	1/16W	
R547	1-216-829-11	METAL GLAZE	4.7K	5%	1/16W	
R550	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R551	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R552	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R553	1-216-685-11	METAL CHIP	27K	0.50%	1/10W	
R554	1-216-842-11	METAL GLAZE	56K	5%	1/16W	
R555	1-216-336-11	METAL GLAZE	47K	1%	1/10W	
R556	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R557	1-216-844-11	METAL GLAZE	82K	5%	1/16W	
R560	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R562	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R649	1-216-309-00	METAL GLAZE	5.6	5%	1/10W	
R650	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R652	1-216-835-11	METAL GLAZE	15K	5%	1/16W	
R653	1-216-835-11	METAL GLAZE	15K	5%	1/16W	
R654	1-216-843-11	METAL GLAZE	68K	5%	1/16W	
R655	1-216-834-11	METAL GLAZE	12K	5%	1/16W	
R656	1-216-134-00	METAL GLAZE	2.2	5%	1/8W	
R657	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R658	1-216-835-11	METAL GLAZE	15K	5%	1/16W	
R659	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R660	1-216-836-11	METAL GLAZE	18K	5%	1/16W	
R661	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R662	1-216-815-11	METAL GLAZE	330	5%	1/16W	
R663	1-216-864-11	METAL GLAZE	0	5%	1/16W	
R664	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R665	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R666	1-216-839-11	METAL GLAZE	33K	5%	1/16W	
R667	1-216-839-11	METAL GLAZE	33K	5%	1/16W	
R668	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R669	1-216-841-11	METAL GLAZE	47K	5%	1/16W	
R670	1-216-807-11	METAL GLAZE	68	5%	1/16W	
R671	1-216-848-11	METAL GLAZE	180K	5%	1/16W	

Ref.No	Part No.	Description				Remark
R672	1-216-848-11	METAL GLAZE	180K	5%	1/16W	
R673	1-216-830-11	METAL GLAZE	5.6K	5%	1/16W	
R674	1-216-840-11	METAL GLAZE	39K	5%	1/16W	
R675	1-216-830-11	METAL GLAZE	5.6K	5%	1/16W	
R676	1-216-830-11	METAL GLAZE	5.6K	5%	1/16W	
R677	1-216-844-11	METAL GLAZE	82K	5%	1/16W	
R679	1-216-837-11	METAL GLAZE	22K	5%	1/16W	
R680	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R681	1-216-817-11	METAL GLAZE	470	5%	1/16W	
R682	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R683	1-216-857-11	METAL GLAZE	1M	5%	1/16W	
R684	1-216-823-11	METAL GLAZE	1.5K	5%	1/16W	
R685	1-216-847-11	METAL GLAZE	150K	5%	1/16W	
R686	1-216-830-11	METAL GLAZE	5.6K	5%	1/16W	
R687	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R688	1-216-841-11	METAL GLAZE	47K	5%	1/16W	
R689	1-216-843-11	METAL GLAZE	68K	5%	1/16W	
R690	1-216-839-11	METAL GLAZE	33K	5%	1/16W	
R691	1-216-857-11	METAL GLAZE	1M	5%	1/16W	
R692	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R694	1-216-847-11	METAL GLAZE	150K	5%	1/16W	
R695	1-216-844-11	METAL GLAZE	82K	5%	1/16W	
R698	1-216-837-11	METAL GLAZE	22K	5%	1/16W	
R699	1-216-827-11	METAL GLAZE	3.3K	5%	1/16W	
R700	1-216-857-11	METAL GLAZE	1M	5%	1/16W	

CRYSTAL

X501	1-578-689-21	VIBRATOR

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*A-7062-270-A CD-20P BOARD, COMPLETE (Ref.No 1,000 Series)
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A-7068-173-A DT-77P BOARD, COMPLETE (HIC)

1-633-975-11 FP-268 FLEXIBLE BOARD

CAPACITOR

C101	1-126-200-11	ELECT CHIP	10MF	20%	35V
C102	1-162-974-11	CERAMIC CHIP	0.01MF		50V
C104	1-128-013-11	ELECT CHIP	1MF	20%	50V
C105	1-126-607-11	ELECT CHIP	47MF	20%	4V
C107	1-162-964-11	CERAMIC CHIP	0.001MF	10%	50V
C110	1-126-206-11	ELECT CHIP	100MF	20%	6.3V
C111	1-162-915-11	CERAMIC CHIP	10PF	0.5PF	50V
C112	1-164-005-11	CERAMIC CHIP	0.47MF		25V
C113	1-128-013-11	ELECT CHIP	1MF	20%	50V
C114	1-128-008-11	ELECT CHIP	3.3MF	20%	35V
C115	1-162-970-11	CERAMIC CHIP	0.01MF	10%	25V
C121	1-162-970-11	CERAMIC CHIP	0.01MF	10%	25V
C122	1-162-964-11	CERAMIC CHIP	0.001MF	10%	50V
C123	1-135-177-21	TANTAL. CHIP	1MF	20%	20V
C124	1-162-970-11	CERAMIC CHIP	0.01MF	10%	25V

When indicating parts by reference number, please include the board name.

CD-20P

Ref.No	Part No.	Description			Remark
C125	1-126-205-11	ELECT CHIP	47MF	20%	6.3V
C126	1-164-156-11	CERAMIC CHIP	0.1MF		25V
C127	1-162-970-11	CERAMIC CHIP	0.01MF	10%	25V
C128	1-162-964-11	CERAMIC CHIP	0.001MF	10%	50V
C129	1-163-809-11	CERAMIC CHIP	0.047MF	10%	25V
C130	1-162-970-11	CERAMIC CHIP	0.01MF	10%	25V
C131	1-162-638-11	CERAMIC CHIP	1MF		16V
C135	1-162-638-11	CERAMIC CHIP	1MF		16V
C136	1-162-974-11	CERAMIC CHIP	0.01MF		50V
C137	1-162-919-11	CERAMIC CHIP	22PF	5%	50V
C138	1-162-962-11	CERAMIC CHIP	470PF	10%	50V
C140	1-162-964-11	CERAMIC CHIP	0.001MF	10%	50V
C141	1-162-942-11	CERAMIC CHIP	12PF	5%	50V
C142	1-135-145-11	TANTAL. CHIP	0.47MF	20%	35V
C144	1-164-156-11	CERAMIC CHIP	0.1MF		25V
C147	1-164-156-11	CERAMIC CHIP	0.1MF		25V
C187	1-162-966-11	CERAMIC CHIP	0.0022MF	10%	50V
C188	1-162-966-11	CERAMIC CHIP	0.0022MF	10%	50V
C189	1-162-966-11	CERAMIC CHIP	0.0022MF	10%	50V
C190	1-162-953-11	CERAMIC CHIP	100PF	5%	50V
C191	1-135-181-21	TANTAL. CHIP	4.7MF	20%	6.3V
C192	1-126-100-11	ELECT	10MF	20%	6.3V
		CONNECTOR			
CN101	*1-565-529-21	PIN, CONNECTOR (PC BOARD) 4P			
		TRIMMER			
CT121	1-141-331-11	CAP, VAR, TRIMMER (CHIP)			
CT122	1-141-356-11	CAP, VAR, TRIMMER (CHIP)			
		DIODE			
D101	8-719-404-46	DIODE MA110			
D102	8-719-404-52	DIODE MA143			
D122	8-719-404-46	DIODE MA110			
D123	8-719-404-46	DIODE MA110			
D124	8-719-404-32	DIODE MA141WA			
D125	8-719-949-46	DIODE 1T32			
D127	8-719-404-46	DIODE MA110			
D128	8-719-404-46	DIODE MA110			
		IC			
IC121	8-752-326-08	IC CXD1159Q			
		COIL			
L101	1-412-063-21	INDUCTOR CHIP	68UH		
L121	1-412-058-11	INDUCTOR CHIP	10UH		
L122	1-412-058-11	INDUCTOR CHIP	10UH		
L123	1-410-381-11	INDUCTOR CHIP	10UH		
L182	1-412-058-11	INDUCTOR CHIP	10UH		
L183	1-412-052-21	INDUCTOR CHIP	1UH		
L184	1-412-058-11	INDUCTOR CHIP	10UH		

Ref.No	Part No.	Description			Remark
		TRANSISTOR			
Q101	8-765-420-02	TRANSISTOR 2SK300-3			
Q102	8-729-905-35	TRANSISTOR 2SC4081-R			
Q121	8-729-402-84	TRANSISTOR XN4601			
Q122	8-729-402-78	TRANSISTOR XN6401			
Q123	8-729-402-19	TRANSISTOR XN6501			
Q125	8-729-905-35	TRANSISTOR 2SC4081-R			
Q126	8-729-402-84	TRANSISTOR XN4601			
Q127	8-729-402-84	TRANSISTOR XN4601			
Q129	8-729-905-23	TRANSISTOR 2SA1576-R			
Q130	8-729-905-35	TRANSISTOR 2SC4081-R			
Q131	8-729-402-84	TRANSISTOR XN4601			
Q132	8-729-402-84	TRANSISTOR XN4601			
Q133	8-729-402-84	TRANSISTOR XN4601			
Q135	8-729-402-84	TRANSISTOR XN4601			
Q136	8-729-402-45	TRANSISTOR UN5212			
Q137	8-729-402-84	TRANSISTOR XN4601			
		RESISTOR			
R101	1-216-845-11	METAL GLAZE	100K	5%	1/16W
R102	1-216-840-11	METAL GLAZE	39K	5%	1/16W
R103	1-216-820-11	METAL GLAZE	820	5%	1/16W
R104	1-216-809-11	METAL GLAZE	100	5%	1/16W
R105	1-216-827-11	METAL GLAZE	3.3K	5%	1/16W
R108	1-216-864-11	METAL GLAZE	0	5%	1/16W
R110	1-216-839-11	METAL GLAZE	33K	5%	1/16W
R111	1-216-839-11	METAL GLAZE	33K	5%	1/16W
R112	1-216-821-11	METAL GLAZE	1K	5%	1/16W
R113	1-216-864-11	METAL GLAZE	0	5%	1/16W
R114	1-216-845-11	METAL GLAZE	100K	5%	1/16W
R115	1-216-821-11	METAL GLAZE	1K	5%	1/16W
R116	1-216-821-11	METAL GLAZE	1K	5%	1/16W
R117	1-216-825-11	METAL GLAZE	2.2K	5%	1/16W
R118	1-216-813-11	METAL GLAZE	220	5%	1/16W
R119	1-216-821-11	METAL GLAZE	1K	5%	1/16W
R120	1-216-813-11	METAL GLAZE	220	5%	1/16W
R121	1-216-835-11	METAL GLAZE	15K	5%	1/16W
R122	1-216-857-11	METAL GLAZE	1M	5%	1/16W
R124	1-216-839-11	METAL GLAZE	33K	5%	1/16W
R125	1-216-845-11	METAL GLAZE	100K	5%	1/16W
R126	1-216-837-11	METAL GLAZE	22K	5%	1/16W
R127	1-216-820-11	METAL GLAZE	820	5%	1/16W
R128	1-216-843-11	METAL GLAZE	68K	5%	1/16W
R129	1-216-833-11	METAL GLAZE	10K	5%	1/16W
R130	1-216-835-11	METAL GLAZE	15K	5%	1/16W
R131	1-216-844-11	METAL GLAZE	82K	5%	1/16W
R132	1-216-844-11	METAL GLAZE	82K	5%	1/16W
R133	1-216-850-11	METAL GLAZE	270K	5%	1/16W
R136	1-216-833-11	METAL GLAZE	10K	5%	1/16W
R138	1-216-836-11	METAL GLAZE	18K	5%	1/16W
R139	1-216-837-11	METAL GLAZE	22K	5%	1/16W
R140	1-216-837-11	METAL GLAZE	22K	5%	1/16W

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description				Remark
R141	1-216-841-11	METAL GLAZE	47K	5%	1/16W	
R142	1-216-837-11	METAL GLAZE	22K	5%	1/16W	
R143	1-216-845-11	METAL GLAZE	100K	5%	1/16W	
R144	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R145	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R148	1-216-848-11	METAL GLAZE	180K	5%	1/16W	
R149	1-216-864-11	METAL GLAZE	0	5%	1/16W	
R154	1-216-864-11	METAL GLAZE	0	5%	1/16W	
R155	1-216-864-11	METAL GLAZE	0	5%	1/16W	
R156	1-216-809-11	METAL GLAZE	100	5%	1/16W	
R157	1-216-843-11	METAL GLAZE	68K	5%	1/16W	
R158	1-216-862-11	METAL GLAZE	2.7M	5%	1/16W	
R159	1-216-809-11	METAL GLAZE	100	5%	1/16W	
R160	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R162	1-216-825-11	METAL GLAZE	2.2K	5%	1/16W	
R163	1-216-845-11	METAL GLAZE	100K	5%	1/16W	
R164	1-216-825-11	METAL GLAZE	2.2K	5%	1/16W	
R165	1-216-837-11	METAL GLAZE	22K	5%	1/16W	
R166	1-216-836-11	METAL GLAZE	18K	5%	1/16W	
R167	1-216-822-11	METAL GLAZE	1.2K	5%	1/16W	
R168	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R169	1-216-864-11	METAL GLAZE	0	5%	1/16W	
R171	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R172	1-216-813-11	METAL GLAZE	220	5%	1/16W	
R173	1-216-813-11	METAL GLAZE	220	5%	1/16W	
R181	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R182	1-216-829-11	METAL GLAZE	4.7K	5%	1/16W	
R183	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R184	1-216-835-11	METAL GLAZE	15K	5%	1/16W	
R185	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R186	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R187	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R188	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R189	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R190	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R191	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R192	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R193	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R194	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R195	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R196	1-216-813-11	METAL GLAZE	220	5%	1/16W	
R197	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R198	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R199	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R200	1-216-844-11	METAL GLAZE	82K	5%	1/16W	
R201	1-216-671-11	METAL CHIP	6.8K	0.50%	1/10W	
R202	1-216-643-11	METAL CHIP	470	0.50%	1/10W	
R203	1-216-681-11	METAL CHIP	18K	0.50%	1/10W	
R204	1-216-671-11	METAL CHIP	6.8K	0.50%	1/10W	
R205	1-216-659-11	METAL CHIP	2.2K	0.50%	1/10W	
R206	1-216-681-11	METAL CHIP	18K	0.50%	1/10W	
R207	1-216-841-11	METAL GLAZE	47K	5%	1/16W	
R208	1-216-825-11	METAL GLAZE	2.2K	5%	1/16W	

Ref.No	Part No.	Description				Remark
R209	1-216-825-11	METAL GLAZE	2.2K	5%	1/16W	
R210	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R215	1-216-842-11	METAL GLAZE	56K	5%	1/16W	
R216	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R217	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R218	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R219	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R220	1-216-835-11	METAL GLAZE	15K	5%	1/16W	
R221	1-216-840-11	METAL GLAZE	39K	5%	1/16W	
R222	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R226	1-216-864-11	METAL GLAZE	0	5%	1/16W	
R229	1-216-864-11	METAL GLAZE	0	5%	1/16W	
R230	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R233	1-216-841-11	METAL GLAZE	47K	5%	1/16W	
R234	1-216-841-11	METAL GLAZE	47K	5%	1/16W	
R235	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R236	1-216-833-11	METAL GLAZE	10K	5%	1/16W	

CRYSTAL

X121	1-579-076-11	VIBRATOR, CRYSTAL
X122	1-567-733-11	VIBRATOR, CRYSTAL

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*A-7062-271-A AF-54P BOARD, COMPLETE (Ref.No 3,000 Series)
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	1-633-974-11	FP-267 FLEXIBLE BOARD
	3-744-718-01	HOLDER (10), C

CAPACITOR

C801	1-163-059-00	CERAMIC CHIP 0.01MF		50V
C802	1-163-059-00	CERAMIC CHIP 0.01MF		50V
C803	1-163-059-00	CERAMIC CHIP 0.01MF		50V
C804	1-164-234-11	CERAMIC CHIP 1MF		10V
C805	1-164-156-11	CERAMIC CHIP 0.1MF		25V
C806	1-164-156-11	CERAMIC CHIP 0.1MF		25V
C807	1-162-966-11	CERAMIC CHIP 0.0022MF	10%	50V
C808	1-135-157-21	TANTAL. CHIP 10MF	20%	6.3V
C810	1-164-156-11	CERAMIC CHIP 0.1MF		25V
C811	1-162-966-11	CERAMIC CHIP 0.0022MF	10%	50V
C812	1-162-966-11	CERAMIC CHIP 0.0022MF	10%	50V
C813	1-162-966-11	CERAMIC CHIP 0.0022MF	10%	50V
C814	1-162-966-11	CERAMIC CHIP 0.0022MF	10%	50V
C815	1-164-156-11	CERAMIC CHIP 0.1MF		25V
C816	1-164-156-11	CERAMIC CHIP 0.1MF		25V
C817	1-164-234-11	CERAMIC CHIP 1MF		10V
C818	1-164-234-11	CERAMIC CHIP 1MF		10V
C819	1-135-177-21	TANTAL. CHIP 1MF	20%	20V
C820	1-164-234-11	CERAMIC CHIP 1MF		10V
C821	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C822	1-162-952-11	CERAMIC CHIP 82PF	5%	50V
C823	1-162-954-11	CERAMIC CHIP 120PF	5%	50V
C824	1-164-234-11	CERAMIC CHIP 1MF		10V

When indicating parts by reference number, please include the board name.

AF-54P

Ref.No	Part No.	Description			Remark
C825	1-162-957-11	CERAMIC CHIP	220PF	5%	50V
C826	1-162-957-11	CERAMIC CHIP	220PF	5%	50V
C827	1-162-957-11	CERAMIC CHIP	220PF	5%	50V
C829	1-164-234-11	CERAMIC CHIP	1MF		10V
C831	1-164-156-11	CERAMIC CHIP	0.1MF		25V
C832	1-164-156-11	CERAMIC CHIP	0.1MF		25V
C833	1-164-156-11	CERAMIC CHIP	0.1MF		25V
C834	1-135-180-21	TANTAL. CHIP	3.3MF	20%	6.3V
C835	1-162-964-11	CERAMIC CHIP	0.001MF	10%	50V
C837	1-162-964-11	CERAMIC CHIP	0.001MF	10%	50V
C839	1-135-177-21	TANTAL. CHIP	1MF	20%	20V

CONNECTOR

Ref.No	Part No.	Description
CN801	*1-565-529-21	PIN, CONNECTOR (PC BOARD) 4P

DIODE

Ref.No	Part No.	Description
D801	8-719-404-46	DIODE MA110

FILTER

Ref.No	Part No.	Description
FL851	1-236-209-11	FILTER, LOW PASS
FL852	1-236-209-11	FILTER, LOW PASS

IC

Ref.No	Part No.	Description
IC801	8-752-334-83	IC CXD1205R
IC802	8-759-148-87	IC CXA8016M
IC803	8-752-335-65	IC CXD1172AM
IC804	8-759-998-96	IC LM324D
IC805	8-759-998-96	IC LM324D

COIL

Ref.No	Part No.	Description
L801	1-410-655-31	INDUCTOR CHIP 120UH

TRANSISTOR

Ref.No	Part No.	Description
Q801	8-729-905-35	TRANSISTOR 2SC4081-R
Q802	8-729-905-35	TRANSISTOR 2SC4081-R
Q806	8-729-905-35	TRANSISTOR 2SC4081-R
Q807	8-729-905-35	TRANSISTOR 2SC4081-R
Q808	8-729-905-35	TRANSISTOR 2SC4081-R
Q809	8-729-402-45	TRANSISTOR UN5212

RESISTOR

Ref.No	Part No.	Description			Remark
R801	1-216-679-11	METAL CHIP	15K	0.50%	1/10W
R802	1-216-679-11	METAL CHIP	15K	0.50%	1/10W
R803	1-216-675-11	METAL CHIP	10K	0.50%	1/10W
R804	1-216-675-11	METAL CHIP	10K	0.50%	1/10W
R805	1-216-821-11	METAL GLAZE	1K	5%	1/16W
R806	1-216-821-11	METAL GLAZE	1K	5%	1/16W
R807	1-216-821-11	METAL GLAZE	1K	5%	1/16W
R808	1-216-821-11	METAL GLAZE	1K	5%	1/16W
R809	1-216-134-00	METAL GLAZE	2.2	5%	1/8W
R810	1-216-144-00	METAL GLAZE	5.6	5%	1/8W

Ref.No	Part No.	Description			Remark
R811	1-216-833-11	METAL GLAZE	10K	5%	1/16W
R816	1-216-864-11	METAL GLAZE	0	5%	1/16W
R819	1-216-833-11	METAL GLAZE	10K	5%	1/16W
R820	1-216-833-11	METAL GLAZE	10K	5%	1/16W
R821	1-216-833-11	METAL GLAZE	10K	5%	1/16W
R822	1-216-833-11	METAL GLAZE	10K	5%	1/16W
R823	1-216-833-11	METAL GLAZE	10K	5%	1/16W
R827	1-216-833-11	METAL GLAZE	10K	5%	1/16W
R828	1-216-833-11	METAL GLAZE	10K	5%	1/16W
R829	1-216-833-11	METAL GLAZE	10K	5%	1/16W
R830	1-216-833-11	METAL GLAZE	10K	5%	1/16W
R831	1-216-833-11	METAL GLAZE	10K	5%	1/16W
R832	1-216-833-11	METAL GLAZE	10K	5%	1/16W
R833	1-216-821-11	METAL GLAZE	1K	5%	1/16W
R834	1-216-821-11	METAL GLAZE	1K	5%	1/16W
R835	1-216-825-11	METAL GLAZE	2.2K	5%	1/16W
R836	1-216-825-11	METAL GLAZE	2.2K	5%	1/16W
R837	1-216-673-11	METAL CHIP	8.2K	0.50%	1/10W
R838	1-216-691-11	METAL CHIP	47K	0.50%	1/10W
R839	1-216-673-11	METAL CHIP	8.2K	0.50%	1/10W
R840	1-216-691-11	METAL CHIP	47K	0.50%	1/10W
R841	1-216-833-11	METAL GLAZE	10K	5%	1/16W
R842	1-216-837-11	METAL GLAZE	22K	5%	1/16W
R843	1-216-844-11	METAL GLAZE	82K	5%	1/16W
R844	1-216-819-11	METAL GLAZE	680	5%	1/16W
R845	1-216-825-11	METAL GLAZE	2.2K	5%	1/16W
R846	1-216-821-11	METAL GLAZE	1K	5%	1/16W
R847	1-216-825-11	METAL GLAZE	2.2K	5%	1/16W
R848	1-216-828-11	METAL GLAZE	3.9K	5%	1/16W
R849	1-216-823-11	METAL GLAZE	1.5K	5%	1/16W
R850	1-216-818-11	METAL GLAZE	560	5%	1/16W
R851	1-216-857-11	METAL GLAZE	1M	5%	1/16W
R852	1-216-857-11	METAL GLAZE	1M	5%	1/16W
R853	1-216-857-11	METAL GLAZE	1M	5%	1/16W
R854	1-216-857-11	METAL GLAZE	1M	5%	1/16W
R858	1-216-833-11	METAL GLAZE	10K	5%	1/16W
R860	1-216-821-11	METAL GLAZE	1K	5%	1/16W
R862	1-216-679-11	METAL CHIP	15K	0.50%	1/10W
R863	1-216-833-11	METAL GLAZE	10K	5%	1/16W
R865	1-216-821-11	METAL GLAZE	1K	5%	1/16W
R866	1-216-821-11	METAL GLAZE	1K	5%	1/16W
R867	1-216-635-11	METAL CHIP	220	0.50%	1/10W
R868	1-216-659-11	METAL CHIP	2.2K	0.50%	1/10W
R869	1-216-825-11	METAL GLAZE	2.2K	5%	1/16W

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When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description		Remark
	*A-7062-274-A	FU-72P BOARD, COMPLETE (Ref.No ***********************		6,000 Series)
	1-633-978-11	FP-295 FLEXIBLE BOARD		
	1-633-977-11	FP-293 FLEXIBLE BOARD		
		CAPACITOR		
C503	1-164-156-11	CERAMIC CHIP 0.1MF		25V
C506	1-135-157-21	TANTAL. CHIP 10MF	20%	6.3V
C507	1-135-157-21	TANTAL. CHIP 10MF	20%	6.3V
C508	1-162-964-11	CERAMIC CHIP 0.001MF	10%	50V
C509	1-135-149-21	TANTAL. CHIP 2.2MF	20%	10V
C510	1-164-156-11	CERAMIC CHIP 0.1MF		25V
C511	1-135-149-21	TANTAL. CHIP 2.2MF	20%	10V
C513	1-164-227-11	CERAMIC CHIP 0.022MF	10%	25V
C514	1-162-917-11	CERAMIC CHIP 15PF	5%	50V
C515	1-164-156-11	CERAMIC CHIP 0.1MF		25V
C516	1-135-149-21	TANTAL. CHIP 2.2MF	20%	10V
C517	1-164-156-11	CERAMIC CHIP 0.1MF		25V
C518	1-135-155-21	TANTAL. CHIP 4.7MF	20%	16V
C519	1-164-156-11	CERAMIC CHIP 0.1MF		25V
C520	1-162-967-11	CERAMIC CHIP 0.0033MF	10%	50V
C525	1-162-970-11	CERAMIC CHIP 0.01MF	10%	25V
C993	1-135-165-11	TANTAL. CHIP 33MF	20%	16V
C994	1-162-966-11	CERAMIC CHIP 0.0022MF		50V
C995	1-126-416-11	ELECT 220MF	20%	10V
		CONNECTOR		
CN502	1-569-480-11	CONNECTOR, FPC 23P		
CN992	1-565-528-11	PIN, CONNECTOR (PC BOARD) 3P		
		TRIMMER		
CT501	1-141-331-11	CAP, VAR, TRIMMER (CHIP)		
		DIODE		
D501	8-719-938-75	DIODE SB05-05CP		
D502	8-719-404-46	DIODE MA110		
D503	8-719-404-46	DIODE MA110		
D504	8-719-404-46	DIODE MA110		
D505	8-719-404-46	DIODE MA110		
D511	8-719-404-46	DIODE MA110		
		IC		
IC501	8-759-150-92	IC UPD75316GF-064-3B9		
IC503	8-759-937-54	IC S-81250HG-RD-S		
IC504	8-759-946-03	IC S-8054ALR-LN-S		
		JACK		
J901	1-537-281-11	TERMINAL BOARD BATTERY TERMINAL		
		COIL		
L501	1-412-032-11	INDUCTOR CHIP 100UH		

Ref.No	Part No.	Description				Remark
L502	1-412-031-11	INDUCTOR CHIP	47UH			
L990	1-412-026-11	INDUCTOR CHIP	1UH			
L991	1-410-337-11	INDUCTOR	1UH			
L992	1-410-337-11	INDUCTOR	1UH			
L993	1-410-337-11	INDUCTOR	1UH			
L997	1-412-026-11	INDUCTOR CHIP	1UH			
		IC LINK				
PS990⚠	1-532-841-21	LINK, IC				
PS991⚠	1-532-840-21	LINK, IC				
PS992⚠	1-532-840-21	LINK, IC				
		TRANSISTOR				
Q502	8-729-905-23	TRANSISTOR 2SA1576-R				
Q503	8-729-109-44	TRANSISTOR 2SK94				
Q504	8-729-905-18	TRANSISTOR DTC144EU				
Q505	8-729-905-35	TRANSISTOR 2SC4081-R				
Q506	8-729-402-78	TRANSISTOR XN6401				
Q507	8-729-402-19	TRANSISTOR XN6501				
Q508	8-729-402-78	TRANSISTOR XN6401				
Q509	8-729-904-20	TRANSISTOR FMA2				
Q579	8-729-905-12	TRANSISTOR DTA144EU				
Q991	8-729-905-35	TRANSISTOR 2SC4081-R				
		RESISTOR				
R501	1-216-841-11	METAL GLAZE	47K	5%	1/16W	
R502	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R503	1-216-845-11	METAL GLAZE	100K	5%	1/16W	
R505	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R511	1-216-829-11	METAL GLAZE	4.7K	5%	1/16W	
R512	1-216-829-11	METAL GLAZE	4.7K	5%	1/16W	
R513	1-216-829-11	METAL GLAZE	4.7K	5%	1/16W	
R514	1-216-829-11	METAL GLAZE	4.7K	5%	1/16W	
R515	1-216-829-11	METAL GLAZE	4.7K	5%	1/16W	
R516	1-216-829-11	METAL GLAZE	4.7K	5%	1/16W	
R517	1-216-829-11	METAL GLAZE	4.7K	5%	1/16W	
R518	1-216-851-11	METAL GLAZE	330K	5%	1/16W	
R519	1-216-841-11	METAL GLAZE	47K	5%	1/16W	
R521	1-216-809-11	METAL GLAZE	100	5%	1/16W	
R522	1-216-809-11	METAL GLAZE	100	5%	1/16W	
R523	1-216-841-11	METAL GLAZE	47K	5%	1/16W	
R524	1-216-841-11	METAL GLAZE	47K	5%	1/16W	
R525	1-216-841-11	METAL GLAZE	47K	5%	1/16W	
R527	1-216-841-11	METAL GLAZE	47K	5%	1/16W	
R528	1-216-841-11	METAL GLAZE	47K	5%	1/16W	
R529	1-216-841-11	METAL GLAZE	47K	5%	1/16W	
R530	1-216-841-11	METAL GLAZE	47K	5%	1/16W	
R531	1-216-809-11	METAL GLAZE	100	5%	1/16W	
R532	1-216-809-11	METAL GLAZE	100	5%	1/16W	
R533	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R534	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R535	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R536	1-216-821-11	METAL GLAZE	1K	5%	1/16W	

When indicating parts by reference number, please include the board name.

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

FU-72P VF-26P

Ref.No	Part No.	Description				Remark
R538	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R539	1-216-841-11	METAL GLAZE	47K	5%	1/16W	
R540	1-216-841-11	METAL GLAZE	47K	5%	1/16W	
R541	1-216-841-11	METAL GLAZE	47K	5%	1/16W	
R542	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R543	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R544	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R545	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R546	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R547	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R548	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R549	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R550	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R551	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R552	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R553	1-216-843-11	METAL GLAZE	68K	5%	1/16W	
R554	1-216-839-11	METAL GLAZE	33K	5%	1/16W	
R555	1-216-861-11	METAL GLAZE	2.2M	5%	1/16W	
R556	1-216-845-11	METAL GLAZE	100K	5%	1/16W	
R557	1-216-845-11	METAL GLAZE	100K	5%	1/16W	
R558	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R559	1-216-851-11	METAL GLAZE	330K	5%	1/16W	
R560	1-216-845-11	METAL GLAZE	100K	5%	1/16W	
R561	1-216-845-11	METAL GLAZE	100K	5%	1/16W	
R562	1-216-845-11	METAL GLAZE	100K	5%	1/16W	
R563	1-216-845-11	METAL GLAZE	100K	5%	1/16W	
R564	1-216-857-11	METAL GLAZE	1M	5%	1/16W	
R565	1-216-857-11	METAL GLAZE	1M	5%	1/16W	
R566	1-216-855-11	METAL GLAZE	680K	5%	1/16W	
R567	1-216-855-11	METAL GLAZE	680K	5%	1/16W	
R568	1-216-845-11	METAL GLAZE	100K	5%	1/16W	
R569	1-216-851-11	METAL GLAZE	330K	5%	1/16W	
R570	1-216-809-11	METAL GLAZE	100	5%	1/16W	
R571	1-216-829-11	METAL GLAZE	4.7K	5%	1/16W	
R572	1-216-809-11	METAL GLAZE	100	5%	1/16W	
R573	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R574	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R575	1-216-864-11	METAL GLAZE	0	5%	1/16W	
R576	1-216-864-11	METAL GLAZE	0	5%	1/16W	
R577	1-216-864-11	METAL GLAZE	0	5%	1/16W	
R578	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R590	1-216-833-11	METAL GLAZE	10K	5%	1/16W	

SWITCH

S501	1-571-275-31	SWITCH, SLIDE
S502	1-572-284-11	SWITCH, SLIDE

CRYSTAL

X501	1-527-997-21	VIBRATOR, CRYSTAL (32.76KHz)
X502	1-577-101-11	VIBRATOR, CERAMIC (4.19MHz)

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Ref.No	Part No.	Description	Remark
	*A-7062-278-A	VF-26P BOARD, COMPLETE (Ref.No 8,000 Series)	

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	1-575-846-11	CONNECTOR, FPC (NON ZIF) 6P

CAPACITOR

C901	1-126-369-11	ELECT	220MF	20%	6.3V
C902	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C904	1-127-515-11	ELECT(SOLID)	47MF	20%	6.3V
C905	1-163-009-11	CERAMIC CHIP	0.001MF	10%	50V
C906	1-163-115-00	CERAMIC CHIP	82PF	5%	50V
C907	⚠1-162-625-11	CERAMIC CHIP	0.0047MF	5%	50V
C908	⚠1-164-182-11	CERAMIC CHIP	0.0033MF	10%	50V
C909	1-126-193-11	ELECT CHIP	1MF	20%	50V
C911	1-131-388-00	TANTALUM	68MF	10%	3.15V
C912	1-102-038-00	CERAMIC	0.001MF		500V
C913	1-163-033-00	CERAMIC CHIP	0.022MF		50V
C915	1-126-193-11	ELECT CHIP	1MF	20%	50V
C916	1-163-037-11	CERAMIC CHIP	0.022MF	10%	25V
C917	1-135-166-21	TANTAL. CHIP	47MF	20%	6.3V
C918	1-162-638-11	CERAMIC CHIP	1MF		16V
C919	1-135-070-00	TANTAL. CHIP	0.1MF	10%	35V
C920	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V

CONNECTOR

CN901	*1-566-195-21	PIN, CONNECTOR (PC BOARD) 2P
CN902	*1-566-195-11	PIN, CONNECTOR (PC BOARD) 2P

CONPOSITION CIRCUIT BLOCK

CP901	1-238-119-11	RES, ADJ

SOCKET

CRT901	1-526-978-21	SOCKET ASSY, CRT

DIODE

D903	8-719-400-20	DIODE MA152WA
D955	8-719-404-21	DIODE LN1251C

IC

IC901	8-759-420-01	IC AN2512S

COIL

L901	1-410-645-31	INDUCTOR	100UH
L902	1-410-385-11	INDUCTOR CHIP	22UH
L903	⚠1-459-858-11	COIL, FERRITE (HLC)	

TRANSISTOR

Q903	8-729-106-68	TRANSISTOR 2SD1615A-GP
Q904	8-729-216-31	TRANSISTOR 2SA1163G

When indicating parts by reference number, please include the board name.

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

RESISTOR

Ref.No	Part No.	Description	Remark
R902	1-216-051-00	METAL GLAZE 1.2K 5% 1/10W	
R903	1-216-041-00	METAL GLAZE 470 5% 1/10W	
R907	1-216-063-00	METAL GLAZE 3.9K 5% 1/10W	
R908	1-216-063-00	METAL GLAZE 3.9K 5% 1/10W	
R909	1-216-061-00	METAL GLAZE 3.3K 5% 1/10W	
R911	1-216-079-00	METAL GLAZE 18K 5% 1/10W	
R914	1-216-133-00	METAL GLAZE 3.3M 5% 1/10W	
R915	1-216-133-00	METAL GLAZE 3.3M 5% 1/10W	
R916	1-216-125-00	METAL GLAZE 1.5M 5% 1/10W	
R917	1-216-121-00	METAL GLAZE 1M 5% 1/10W	
R919	1-216-097-00	METAL GLAZE 100K 5% 1/10W	
R920	1-216-113-00	METAL GLAZE 470K 5% 1/10W	
R921	1-216-013-00	METAL GLAZE 33 5% 1/10W	
R922	1-216-055-00	METAL GLAZE 1.8K 5% 1/10W	
R923	1-216-025-00	METAL GLAZE 100 5% 1/10W	
R924	1-216-306-11	METAL GLAZE 3.9 5% 1/10W	
R925	1-216-336-11	METAL GLAZE 47K 1% 1/10W	
R926	1-216-107-00	METAL GLAZE 270K 1% 1/10W	
R928	1-216-870-11	METAL GLAZE 180K 1% 1/10W	
R929	1-216-053-00	METAL GLAZE 1.5K 5% 1/10W	
R930	1-216-089-00	METAL GLAZE 47K 5% 1/10W	
R931	1-216-121-00	METAL GLAZE 1M 5% 1/10W	
R950	1-216-041-00	METAL GLAZE 470 5% 1/10W	
R951	1-216-311-00	METAL GLAZE 6.8 5% 1/10W	

VARIABLE RESISTOR

Ref.No	Part No.	Description	Remark
RV901	1-238-647-11	RES, ADJ, METAL GLAZE 4.7M	

TRANSFORMER

Ref.No	Part No.	Description	Remark
T901	⚠.1-439-428-11	TRANSFORMER ASSY, FLYBACK	

THERMISTOR

Ref.No	Part No.	Description	Remark
TH901	1-807-938-11	THERMISTOR	

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*A-7062-279-A VF-27P BOARD, COMPLETE (Ref.No 9,000 Series)

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Ref.No	Part No.	Description	Remark
	1-575-846-11	CONNECTOR, FPC (NON ZIF) 6P	

CAPACITOR

Ref.No	Part No.	Description	Remark
C901	1-124-442-00	ELECT 330MF 20% 6.3V	
C903	1-163-077-00	CERAMIC CHIP 0.1MF 50V	
C904	1-126-160-11	ELECT 1MF 20% 50V	
C905	1-163-037-11	CERAMIC CHIP 0.022MF 10% 25V	
C906	1-131-381-00	TANTALUM 47MF 10% 6.3V	
C907	1-162-638-11	CERAMIC CHIP 1MF 16V	
C908	1-136-165-00	FILM 0.1MF 5% 50V	
C909	1-163-109-00	CERAMIC CHIP 47PF 5% 50V	
C910	1-124-587-11	ELECT 220MF 20% 6.3V	
C911	1-163-141-00	CERAMIC CHIP 0.001MF 5% 50V	
C912	⚠1-162-625-11	CERAMIC CHIP 0.0047MF 5% 50V	
C913	⚠1-162-625-11	CERAMIC CHIP 0.0047MF 5% 50V	
C914	⚠1-163-209-00	CERAMIC CHIP 0.0015MF 5% 50V	
C915	1-126-090-11	ELECT 82MF 20% 10V	
C916	1-126-163-11	ELECT 4.7MF 20% 50V	
C918	1-163-037-11	CERAMIC CHIP 0.022MF 10% 25V	
C919	1-102-038-00	CERAMIC 0.001MF 500V	

CONNECTOR

Ref.No	Part No.	Description	Remark
CN902	*1-566-195-11	PIN, CONNECTOR (PC BOARD) 2P	
CN903	*1-566-195-21	PIN, CONNECTOR (PC BOARD) 2P	

DIODE

Ref.No	Part No.	Description	Remark
D903	8-719-400-20	DIODE MA152WA	
D955	8-719-404-21	DIODE LN1251C	

IC

Ref.No	Part No.	Description	Remark
IC901	8-759-420-01	IC AN2512S	

COIL

Ref.No	Part No.	Description	Remark
L901	1-410-831-21	INDUCTOR 82UH	
L902	1-408-977-21	INDUCTOR 39UH	
L903	⚠1-459-858-11	COIL, FERRITE (HLC)	

TRANSISTOR

Ref.No	Part No.	Description	Remark
Q903	8-729-216-31	TRANSISTOR 2SA1163G	
Q904	8-729-100-66	TRANSISTOR 2SC1623	
Q905	8-729-106-68	TRANSISTOR 2SD1615A-GP	

RESISTOR

Ref.No	Part No.	Description	Remark
R903	1-216-041-00	METAL GLAZE 470 5% 1/10W	
R905	1-216-007-00	METAL GLAZE 18 5% 1/10W	
R906	1-216-121-00	METAL GLAZE 1M 5% 1/10W	
R908	1-216-097-00	METAL GLAZE 100K 5% 1/10W	
R909	1-216-113-00	METAL GLAZE 470K 5% 1/10W	
R910	1-216-053-00	METAL GLAZE 1.5K 5% 1/10W	
R911	1-216-013-00	METAL GLAZE 33 5% 1/10W	
R912	1-216-691-11	METAL CHIP 47K 0.50% 1/10W	
R913	1-216-107-00	METAL GLAZE 270K 1% 1/10W	
R914	1-216-025-00	METAL GLAZE 100 5% 1/10W	
R915	1-216-306-11	METAL GLAZE 3.9 5% 1/10W	
R917	1-216-045-00	METAL GLAZE 680 5% 1/10W	
R918	1-216-069-00	METAL GLAZE 6.8K 5% 1/10W	
R919	1-216-748-11	METAL GLAZE 39K 5% 1/10W	
R920	1-216-748-11	METAL GLAZE 39K 5% 1/10W	
R921	1-216-053-00	METAL GLAZE 1.5K 5% 1/10W	
R922	1-216-101-00	METAL GLAZE 150K 5% 1/10W	
R923	1-216-121-00	METAL GLAZE 1M 5% 1/10W	
R924	1-216-131-11	METAL GLAZE 2.7M 5% 1/10W	
R925	1-216-131-11	METAL GLAZE 2.7M 5% 1/10W	
R926	1-216-055-00	METAL GLAZE 1.8K 5% 1/10W	
R928	1-216-051-00	METAL GLAZE 1.2K 5% 1/10W	

When indicating parts by reference number, please include the board name.

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

VF-27P MC-44P SS-100P

Ref.No	Part No.	Description	Remark
R933	1-216-121-00	METAL GLAZE 1M 5% 1/10W	
R950	1-216-041-00	METAL GLAZE 470 5% 1/10W	

VARIABLE RESISTOR

Ref.No	Part No.	Description	Remark
RV901	1-230-873-11	RES, ADJ, METAL GLAZE 47K	
RV902	1-230-866-11	RES, ADJ, METAL GLAZE 470	
RV903	1-230-869-11	RES, ADJ, METAL GLAZE 4.7K	
RV904	1-228-762-00	RES, ADJ, METAL GLAZE 1M	

TRANSFORMER

Ref.No	Part No.	Description	Remark
T901 ⚠	1-439-431-11	TRANSFORMER ASSY, FLYBACK	

THERMISTOR

Ref.No	Part No.	Description	Remark
TH901	1-807-938-11	THERMISTOR	

SOCKET

Ref.No	Part No.	Description	Remark
W901	1-540-019-21	SOCKET ASSY, CRT	

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*A-7062-280-A MC-44P BOARD, COMPLETE (Ref.No 2,000 Series)

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CAPACITOR

Ref.No	Part No.	Description	Remark
C650	1-162-953-11	CERAMIC CHIP 100PF 5% 50V	
C651	1-162-964-11	CERAMIC CHIP 0.001MF 10% 50V	
C652	1-162-970-11	CERAMIC CHIP 0.01MF 10% 25V	
C653	1-164-633-11	CERAMIC CHIP 0.1MF 10% 25V	
C655	1-164-232-11	CERAMIC CHIP 0.01MF 10% 50V	
C656	1-126-154-11	ELECT 47MF 20% 6.3V	
C657	1-162-963-11	CERAMIC CHIP 680PF 10% 50V	
C659	1-162-638-11	CERAMIC CHIP 1MF 16V	
C674	1-162-953-11	CERAMIC CHIP 100PF 5% 50V	
C675	1-162-638-11	CERAMIC CHIP 1MF 16V	
C677	1-162-964-11	CERAMIC CHIP 0.001MF 10% 50V	
C678	1-126-155-11	ELECT 100MF 20% 6.3V	
C681	1-162-964-11	CERAMIC CHIP 0.001MF 10% 50V	
C683	1-162-964-11	CERAMIC CHIP 0.001MF 10% 50V	
C685	1-164-633-11	CERAMIC CHIP 0.1MF 10% 25V	
C687	1-162-638-11	CERAMIC CHIP 1MF 16V	

CONNECTOR

Ref.No	Part No.	Description	Remark
CN650	1-565-528-11	PIN, CONNECTOR (PC BOARD) 3P	
CN652	1-565-874-11	PIN, CONNECTOR (PC BOARD) 2P	

DIODE

Ref.No	Part No.	Description	Remark
D652	8-719-106-43	DIODE RD9.1M-B1	
D655	8-719-404-46	DIODE MA110	

IC

Ref.No	Part No.	Description	Remark
IC650	8-759-822-37	IC LA7293M-TE-L	

JACK

Ref.No	Part No.	Description	Remark
J650	1-507-899-31	JACK (SMALL TYPE) (MIC PLUG IN POWER)	
J651	1-563-454-11	JACK, MINIATURE (DC OUT)	

COIL

Ref.No	Part No.	Description	Remark
L650	1-410-369-11	INDUCTOR CHIP 1UH	
L652	1-410-192-51	INDUCTOR CHIP 1UH	
L653	1-410-192-51	INDUCTOR CHIP 1UH	
L654	1-410-369-11	INDUCTOR CHIP 1UH	

TRANSISTOR

Ref.No	Part No.	Description	Remark
Q650	8-729-109-44	TRANSISTOR 2SK94	
Q651	8-729-905-35	TRANSISTOR 2SC4081-R	

RESISTOR

Ref.No	Part No.	Description	Remark
R650	1-216-833-11	METAL GLAZE 10K 5% 1/16W	
R651	1-216-818-11	METAL GLAZE 560 5% 1/16W	
R652	1-216-833-11	METAL GLAZE 10K 5% 1/16W	
R653	1-216-844-11	METAL GLAZE 82K 5% 1/16W	
R654	1-216-845-11	METAL GLAZE 100K 5% 1/16W	
R655	1-216-826-11	METAL GLAZE 2.7K 5% 1/16W	
R656	1-216-828-11	METAL GLAZE 3.9K 5% 1/16W	
R664	1-216-831-11	METAL GLAZE 6.8K 5% 1/16W	
R665	1-216-837-11	METAL GLAZE 22K 5% 1/16W	
R675	1-216-864-11	METAL GLAZE 0 5% 1/16W	
R680	1-216-857-11	METAL GLAZE 1M 5% 1/16W	
R681	1-216-841-11	METAL GLAZE 47K 5% 1/16W	
R682	1-216-864-11	METAL GLAZE 0 5% 1/16W	

SWITCH

Ref.No	Part No.	Description	Remark
S650	1-553-977-00	SWITCH, SLIDE (BUILT IN MIC)	
S651	1-571-787-11	SWITCH, TACTILE (REC START/STOP)	

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*A-7062-281-A SS-100P BOARD, COMPLETE (Ref.No 4,000 Series)

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Ref.No	Part No.	Description	Remark
	1-562-880-11	CONNECTOR, CARD EDGE 15P	
	1-569-346-11	CONNECTOR, FPC (TRANSLATION) 10P	
	1-633-923-11	FP-252 FLEXIBLE BOARD	
	1-633-924-11	FP-248 FLEXIBLE BOARD	
	3-831-441-11	SPACER	

CAPACITOR

Ref.No	Part No.	Description	Remark
C400	1-162-970-11	CERAMIC CHIP 0.01MF 10% 25V	
C401	1-162-970-11	CERAMIC CHIP 0.01MF 10% 25V	
C402	1-162-970-11	CERAMIC CHIP 0.01MF 10% 25V	
C404	1-163-038-00	CERAMIC CHIP 0.1MF 25V	
C409	1-163-038-00	CERAMIC CHIP 0.1MF 25V	
C412	1-162-969-11	CERAMIC CHIP 0.0068MF 10% 25V	
C501	1-126-157-11	ELECT 10MF 20% 16V	
C502	1-126-160-11	ELECT 1MF 20% 50V	
C504	1-163-038-00	CERAMIC CHIP 0.1MF 25V	

When indicating parts by reference number, please include the board name.

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

Ref.No	Part No.	Description			Remark
C505	1-164-633-11	CERAMIC CHIP	0.1MF	10%	25V
C506	1-126-094-11	ELECT	4.7MF	20%	35V
C507	1-164-330-21	CERAMIC CHIP	0.22MF	10%	16V
C508	1-164-330-21	CERAMIC CHIP	0.22MF	10%	16V
C509	1-162-967-11	CERAMIC CHIP	0.0033MF	10%	50V
C510	1-162-967-11	CERAMIC CHIP	0.0033MF	10%	50V
C511	1-162-967-11	CERAMIC CHIP	0.0033MF	10%	50V
C512	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C513	1-128-055-11	ELECT	33MF	20%	10V
C514	1-130-495-00	MYLAR	0.1MF	5%	50V
C515	1-162-964-11	CERAMIC CHIP	0.001MF	10%	50V
C516	1-164-633-11	CERAMIC CHIP	0.1MF	10%	25V
C517	1-162-969-11	CERAMIC CHIP	0.0068MF	10%	25V
C518	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C519	1-164-330-21	CERAMIC CHIP	0.22MF	10%	16V
C520	1-164-330-21	CERAMIC CHIP	0.22MF	10%	16V
C521	1-164-330-21	CERAMIC CHIP	0.22MF	10%	16V
C522	1-162-638-11	CERAMIC CHIP	1MF		16V
C523	1-128-055-11	ELECT	33MF	20%	10V
C524	1-163-035-00	CERAMIC CHIP	0.047MF		50V
C525	1-126-162-11	ELECT	3.3MF	20%	50V
C526	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C527	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C528	1-162-943-11	CERAMIC CHIP	15PF	5%	50V
C529	1-162-943-11	CERAMIC CHIP	15PF	5%	50V
C530	1-126-157-11	ELECT	10MF	20%	16V
C531	1-126-157-11	ELECT	10MF	20%	16V
C532	1-162-961-11	CERAMIC CHIP	330PF	10%	50V
C533	1-162-968-11	CERAMIC CHIP	0.0047MF	10%	50V
C534	1-162-967-11	CERAMIC CHIP	0.0033MF	10%	50V
C535	1-163-035-00	CERAMIC CHIP	0.047MF		50V
C536	1-162-962-11	CERAMIC CHIP	470PF	10%	50V
C537	1-162-964-11	CERAMIC CHIP	0.001MF	10%	50V
C538	1-162-949-11	CERAMIC CHIP	47PF	5%	50V
C539	1-162-941-11	CERAMIC CHIP	10PF	0.5PF	50V
C540	1-162-965-11	CERAMIC CHIP	0.0015MF	10%	50V
C541	1-162-945-11	CERAMIC CHIP	22PF	5%	50V
C542	1-164-247-11	CERAMIC CHIP	0.047MF	10%	16V
C543	1-164-247-11	CERAMIC CHIP	0.047MF	10%	16V
C545	1-162-964-11	CERAMIC CHIP	0.001MF	10%	50V
C546	1-164-633-11	CERAMIC CHIP	0.1MF	10%	25V
C547	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C548	1-162-638-11	CERAMIC CHIP	1MF		16V
C549	1-162-638-11	CERAMIC CHIP	1MF		16V
C550	1-162-966-11	CERAMIC CHIP	0.0022MF		50V
C551	1-163-023-00	CERAMIC CHIP	0.015MF		50V
C552	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C553	1-162-962-11	CERAMIC CHIP	470PF	10%	50V
C554	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C555	1-162-970-11	CERAMIC CHIP	0.01MF	10%	25V
C556	1-163-035-00	CERAMIC CHIP	0.047MF		50V
C557	1-163-081-00	CERAMIC CHIP	0.22MF		25V
C559	1-162-921-11	CERAMIC CHIP	33PF	5%	50V
C560	1-162-921-11	CERAMIC CHIP	33PF	5%	50V
C561	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C562	1-126-157-11	ELECT	10MF	20%	16V
C563	1-126-157-11	ELECT	10MF	20%	16V
C564	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C565	1-162-964-11	CERAMIC CHIP	0.001MF	10%	50V
C566	1-162-964-11	CERAMIC CHIP	0.001MF	10%	50V
C567	1-163-037-11	CERAMIC CHIP	0.022MF	10%	25V
C568	1-163-037-11	CERAMIC CHIP	0.022MF	10%	25V
C569	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C592	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C609	1-126-805-11	ELECT	33MF	20%	10V
C610	1-124-589-11	ELECT	47MF	20%	16V
C620	1-164-227-11	CERAMIC CHIP	0.022MF	10%	25V
C625	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C700	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C710	1-162-964-11	CERAMIC CHIP	0.001MF	10%	50V
C711	1-162-962-11	CERAMIC CHIP	470PF	10%	50V
C720	1-162-967-11	CERAMIC CHIP	0.0033MF	10%	50V
C901	1-162-921-11	CERAMIC CHIP	33PF	5%	50V
C902	1-164-245-11	CERAMIC CHIP	0.015MF	10%	25V
C903	1-164-227-11	CERAMIC CHIP	0.022MF	10%	25V
C904	1-162-964-11	CERAMIC CHIP	0.001MF	10%	50V
C905	1-164-227-11	CERAMIC CHIP	0.022MF	10%	25V
C906	1-164-227-11	CERAMIC CHIP	0.022MF	10%	25V
C907	1-162-964-11	CERAMIC CHIP	0.001MF	10%	50V
C908	1-162-964-11	CERAMIC CHIP	0.001MF	10%	50V
C909	1-128-055-11	ELECT	33MF	20%	10V
C910	1-128-055-11	ELECT	33MF	20%	10V
C911	1-126-805-11	ELECT	33MF	20%	10V
C912	1-127-558-11	ELECT(SOLID)	10MF	20%	10V
C913	1-126-805-11	ELECT	33MF	20%	10V
C914	1-127-561-11	ELECT(SOLID)	33MF	20%	10V
C915	1-127-558-11	ELECT(SOLID)	10MF	20%	10V
C916	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C917	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C918	1-164-633-11	CERAMIC CHIP	0.1MF	10%	25V
C920	1-164-633-11	CERAMIC CHIP	0.1MF	10%	25V
C921	1-164-633-11	CERAMIC CHIP	0.1MF	10%	25V
C922	1-164-633-11	CERAMIC CHIP	0.1MF	10%	25V
C923	1-162-966-11	CERAMIC CHIP	0.0022MF	10%	50V
C925	1-164-217-11	CERAMIC CHIP	150PF	0.25PF	50V
C930	1-162-967-11	CERAMIC CHIP	0.0033MF	10%	50V
C931	1-162-967-11	CERAMIC CHIP	0.0033MF	10%	50V
C932	1-162-967-11	CERAMIC CHIP	0.0033MF	10%	50V
C933	1-164-337-11	CERAMIC CHIP	2.2MF		16V
C934	1-135-211-11	TANTAL. CHIP	6.8MF	20%	6.3V
C935	1-164-156-11	CERAMIC CHIP	0.1MF		25V

CONNECTOR

Ref.No	Part No.	Description
CN501	*1-565-211-11	CONNECTOR, FPC (ZIF) 22P
CN502	1-569-364-21	CONNECTOR, FPC 19P
CN503	1-565-878-11	PIN, CONNECTOR (PC BOARD) 6P

When indicating parts by reference number, please include the board name.

SS-100P

Ref.No	Part No.	Description	Remark
CN506	1-569-627-11	CONNECTOR, BOARD TO BOARD 16P	
CN507	1-569-626-11	CONNECTOR, BOARD TO BOARD 20P	
CN508	1-565-530-11	PIN, CONNECTOR (PC BOARD) 5P	
CN509	1-568-207-11	CONNECTOR, FPC (ZIF) 23P	

DIODE

Ref.No	Part No.	Description	Remark
D501	8-719-941-86	DIODE DAN202U	
D506	8-719-941-86	DIODE DAN202U	
D510	8-719-404-46	DIODE MA110	
D901	8-719-938-75	DIODE SB05-05CP	
D902	8-719-938-75	DIODE SB05-05CP	
D903	8-719-938-78	DIODE SB10-05PCP	

FILTER

Ref.No	Part No.	Description	Remark
FL402	1-236-145-11	FILTER, BAND PASS	

IC

Ref.No	Part No.	Description	Remark
IC501	8-752-815-89	IC CXP80116-679Q	
IC502	8-759-148-05	IC CXA8010M	
IC503	8-759-990-55	IC CXA8006M	
IC504	8-759-805-06	IC CXA1127M	
IC506	8-752-035-48	IC CXA1204Q	
IC507	8-759-030-03	IC LM393M	
IC508	8-759-748-65	IC BR93C46F	
IC901	8-759-500-42	IC MB3783PFV	

COIL

Ref.No	Part No.	Description	Remark
L501	1-410-381-11	INDUCTOR CHIP 10UH	
L502	1-410-381-11	INDUCTOR CHIP 10UH	
L503	1-408-795-21	INDUCTOR CHIP 330UH	
L504	1-410-381-11	INDUCTOR CHIP 10UH	
L505	1-410-381-11	INDUCTOR CHIP 10UH	
L515	1-412-028-11	INDUCTOR CHIP 4.7UH	
L901	1-424-104-11	COIL, CHOKE 10UH	
L902	1-424-104-11	COIL, CHOKE 10UH	
L903	1-424-106-11	COIL, CHOKE 47UH	
L904	1-424-106-11	COIL, CHOKE 47UH	
L905	1-424-105-11	COIL, CHOKE 22UH	
L906	1-412-027-11	INDUCTOR CHIP 2.2UH	
L907	1-412-029-11	INDUCTOR CHIP 10UH	
L908	1-412-029-11	INDUCTOR CHIP 10UH	
L909	1-412-029-11	INDUCTOR CHIP 10UH	

IC LINK

Ref.No	Part No.	Description	Remark
PS501⚠	1-532-605-00	LINK, IC	

TRANSISTOR

Ref.No	Part No.	Description	Remark
Q400	8-729-905-35	TRANSISTOR 2SC4081-R	
Q401	8-729-905-35	TRANSISTOR 2SC4081-R	
Q402	8-729-905-35	TRANSISTOR 2SC4081-R	
Q502	8-729-905-35	TRANSISTOR 2SC4081-R	
Q503	8-729-905-23	TRANSISTOR 2SA1576-R	
Q505	8-729-905-35	TRANSISTOR 2SC4081-R	
Q506	8-729-905-23	TRANSISTOR 2SA1576-R	
Q507	8-729-905-35	TRANSISTOR 2SC4081-R	
Q508	8-729-905-23	TRANSISTOR 2SA1576-R	
Q509	8-729-905-35	TRANSISTOR 2SC4081-R	
Q510	8-729-905-35	TRANSISTOR 2SC4081-R	
Q511	8-729-905-23	TRANSISTOR 2SA1576-R	
Q512	8-729-907-00	TRANSISTOR DTC114EU	
Q513	8-729-905-35	TRANSISTOR 2SC4081-R	
Q514	8-729-905-35	TRANSISTOR 2SC4081-R	
Q515	8-729-905-18	TRANSISTOR DTC144EU	
Q516	8-729-905-18	TRANSISTOR DTC144EU	
Q540	8-729-822-48	TRANSISTOR FC101	
Q901	8-729-805-25	TRANSISTOR 2SB1121	
Q902	8-729-805-25	TRANSISTOR 2SB1121	
Q903	8-729-805-25	TRANSISTOR 2SB1121	
Q904	8-729-820-43	TRANSISTOR 2SB1202FAT-TL	
Q905	8-729-905-35	TRANSISTOR 2SC4081-R	

RESISTOR

Ref.No	Part No.	Description	Remark
R400	1-216-837-11	METAL GLAZE 22K 5% 1/16W	
R401	1-216-837-11	METAL GLAZE 22K 5% 1/16W	
R402	1-216-823-11	METAL GLAZE 1.5K 5% 1/16W	
R403	1-216-821-11	METAL GLAZE 1K 5% 1/16W	
R404	1-216-821-11	METAL GLAZE 1K 5% 1/16W	
R405	1-216-825-11	METAL GLAZE 2.2K 5% 1/16W	
R406	1-216-825-11	METAL GLAZE 2.2K 5% 1/16W	
R407	1-216-837-11	METAL GLAZE 22K 5% 1/16W	
R408	1-216-837-11	METAL GLAZE 22K 5% 1/16W	
R409	1-216-825-11	METAL GLAZE 2.2K 5% 1/16W	
R417	1-216-864-11	METAL GLAZE 0 5% 1/16W	
R418	1-216-864-11	METAL GLAZE 0 5% 1/16W	
R501	1-216-851-11	METAL GLAZE 330K 5% 1/16W	
R502	1-216-849-11	METAL GLAZE 220K 5% 1/16W	
R503	1-216-841-11	METAL GLAZE 47K 5% 1/16W	
R504	1-216-833-11	METAL GLAZE 10K 5% 1/16W	
R506	1-216-845-11	METAL GLAZE 100K 5% 1/16W	
R507	1-216-833-11	METAL GLAZE 10K 5% 1/16W	
R508	1-216-833-11	METAL GLAZE 10K 5% 1/16W	
R510	1-216-845-11	METAL GLAZE 100K 5% 1/16W	
R511	1-216-833-11	METAL GLAZE 10K 5% 1/16W	
R512	1-216-833-11	METAL GLAZE 10K 5% 1/16W	
R513	1-216-827-11	METAL GLAZE 3.3K 5% 1/16W	
R514	1-216-833-11	METAL GLAZE 10K 5% 1/16W	
R515	1-216-827-11	METAL GLAZE 3.3K 5% 1/16W	
R516	1-216-833-11	METAL GLAZE 10K 5% 1/16W	
R517	1-216-851-11	METAL GLAZE 330K 5% 1/16W	
R518	1-216-841-11	METAL GLAZE 47K 5% 1/16W	
R519	1-216-827-11	METAL GLAZE 3.3K 5% 1/16W	
R520	1-216-833-11	METAL GLAZE 10K 5% 1/16W	
R521	1-216-845-11	METAL GLAZE 100K 5% 1/16W	
R522	1-216-833-11	METAL GLAZE 10K 5% 1/16W	
R523	1-216-845-11	METAL GLAZE 100K 5% 1/16W	

When indicating parts by reference number, please include the board name.

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

Ref.No	Part No.	Description				Remark
R524	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R525	1-216-845-11	METAL GLAZE	100K	5%	1/16W	
R526	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R527	1-216-845-11	METAL GLAZE	100K	5%	1/16W	
R528	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R529	1-216-845-11	METAL GLAZE	100K	5%	1/16W	
R530	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R531	1-216-845-11	METAL GLAZE	100K	5%	1/16W	
R532	1-216-829-11	METAL GLAZE	4.7K	5%	1/16W	
R534	1-216-841-11	METAL GLAZE	47K	5%	1/16W	
R535	1-216-843-11	METAL GLAZE	68K	5%	1/16W	
R536	1-216-857-11	METAL GLAZE	1M	5%	1/16W	
R537	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R538	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R539	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R540	1-216-845-11	METAL GLAZE	100K	5%	1/16W	
R541	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R542	1-216-837-11	METAL GLAZE	22K	5%	1/16W	
R543	1-216-829-11	METAL GLAZE	4.7K	5%	1/16W	
R544	1-216-837-11	METAL GLAZE	22K	5%	1/16W	
R545	1-216-829-11	METAL GLAZE	4.7K	5%	1/16W	
R546	1-216-837-11	METAL GLAZE	22K	5%	1/16W	
R547	1-216-829-11	METAL GLAZE	4.7K	5%	1/16W	
R548	1-217-671-11	METAL GLAZE	1	5%	1/10W	
R549	1-217-671-11	METAL GLAZE	1	5%	1/10W	
R550	1-217-671-11	METAL GLAZE	1	5%	1/10W	
R551	1-217-671-11	METAL GLAZE	1	5%	1/10W	
R552	1-216-037-00	METAL GLAZE	330	5%	1/10W	
R553	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R555	1-216-845-11	METAL GLAZE	100K	5%	1/16W	
R556	1-216-827-11	METAL GLAZE	3.3K	5%	1/16W	
R557	1-216-864-11	METAL GLAZE	0	5%	1/16W	
R558	1-216-691-11	METAL CHIP	47K	0.50%	1/10W	
R559	1-216-691-11	METAL CHIP	47K	0.50%	1/10W	
R560	1-216-827-11	METAL GLAZE	3.3K	5%	1/16W	
R561	1-216-825-11	METAL GLAZE	2.2K	5%	1/16W	
R562	1-216-813-11	METAL GLAZE	220	5%	1/16W	
R563	1-216-789-11	METAL GLAZE	2.2	5%	1/16W	
R564	1-216-789-11	METAL GLAZE	2.2	5%	1/16W	
R565	1-216-789-11	METAL GLAZE	2.2	5%	1/16W	
R566	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R567	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R568	1-216-817-11	METAL GLAZE	470	5%	1/16W	
R569	1-216-817-11	METAL GLAZE	470	5%	1/16W	
R571	1-216-841-11	METAL GLAZE	47K	5%	1/16W	
R572	1-216-841-11	METAL GLAZE	47K	5%	1/16W	
R573	1-216-841-11	METAL GLAZE	47K	5%	1/16W	
R574	1-216-841-11	METAL GLAZE	47K	5%	1/16W	
R575	1-216-817-11	METAL GLAZE	470	5%	1/16W	
R576	1-216-813-11	METAL GLAZE	220	5%	1/16W	
R577	1-216-811-11	METAL GLAZE	150	5%	1/16W	
R578	1-216-817-11	METAL GLAZE	470	5%	1/16W	
R579	1-216-803-11	METAL GLAZE	33	5%	1/16W	

Ref.No	Part No.	Description				Remark
R582	1-216-864-11	METAL GLAZE	0	5%	1/16W	
R583	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R586	1-216-827-11	METAL GLAZE	3.3K	5%	1/16W	
R587	1-216-827-11	METAL GLAZE	3.3K	5%	1/16W	
R589	1-216-829-11	METAL GLAZE	4.7K	5%	1/16W	
R590	1-216-827-11	METAL GLAZE	3.3K	5%	1/16W	
R591	1-216-827-11	METAL GLAZE	3.3K	5%	1/16W	
R592	1-216-829-11	METAL GLAZE	4.7K	5%	1/16W	
R594	1-216-835-11	METAL GLAZE	15K	5%	1/16W	
R595	1-216-839-11	METAL GLAZE	33K	5%	1/16W	
R596	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R597	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R598	1-216-809-11	METAL GLAZE	100	5%	1/16W	
R599	1-216-809-11	METAL GLAZE	100	5%	1/16W	
R600	1-216-831-11	METAL GLAZE	6.8K	5%	1/16W	
R601	1-216-839-11	METAL GLAZE	33K	5%	1/16W	
R602	1-216-839-11	METAL GLAZE	33K	5%	1/16W	
R603	1-216-857-11	METAL GLAZE	1M	5%	1/16W	
R604	1-216-837-11	METAL GLAZE	22K	5%	1/16W	
R605	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R606	1-216-837-11	METAL GLAZE	22K	5%	1/16W	
R607	1-216-857-11	METAL GLAZE	1M	5%	1/16W	
R608	1-216-854-11	METAL GLAZE	560K	5%	1/16W	
R609	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R610	1-216-845-11	METAL GLAZE	100K	5%	1/16W	
R611	1-216-845-11	METAL GLAZE	100K	5%	1/16W	
R613	1-216-845-11	METAL GLAZE	100K	5%	1/16W	
R614	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R615	1-216-851-11	METAL GLAZE	330K	5%	1/16W	
R616	1-216-857-11	METAL GLAZE	1M	5%	1/16W	
R618	1-216-847-11	METAL GLAZE	150K	5%	1/16W	
R619	1-216-837-11	METAL GLAZE	22K	5%	1/16W	
R620	1-216-837-11	METAL GLAZE	22K	5%	1/16W	
R621	1-216-857-11	METAL GLAZE	1M	5%	1/16W	
R622	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R623	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R624	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R625	1-216-845-11	METAL GLAZE	100K	5%	1/16W	
R626	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R627	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R628	1-216-829-11	METAL GLAZE	4.7K	5%	1/16W	
R629	1-216-182-00	METAL GLAZE	220	5%	1/8W	
R630	1-216-182-00	METAL GLAZE	220	5%	1/8W	
R631	1-216-815-11	METAL GLAZE	330	5%	1/16W	
R632	1-216-813-11	METAL GLAZE	220	5%	1/16W	
R633	1-216-864-11	METAL GLAZE	0	5%	1/16W	
R635	1-216-864-11	METAL GLAZE	0	5%	1/16W	
R689	1-216-841-11	METAL GLAZE	47K	5%	1/16W	
R714	1-216-827-11	METAL GLAZE	3.3K	5%	1/16W	
R715	1-216-831-11	METAL GLAZE	6.8K	5%	1/16W	
R716	1-216-829-11	METAL GLAZE	4.7K	5%	1/16W	
R717	1-216-829-11	METAL GLAZE	4.7K	5%	1/16W	
R719	1-216-841-11	METAL GLAZE	47K	5%	1/16W	

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description	Remark
R720	1-216-841-11	METAL GLAZE 47K 5% 1/16W	
R721	1-216-864-11	METAL GLAZE 0 5% 1/16W	
R722	1-216-864-11	METAL GLAZE 0 5% 1/16W	
R726	1-216-829-11	METAL GLAZE 4.7K 5% 1/16W	
R727	1-216-833-11	METAL GLAZE 10K 5% 1/16W	
R728	1-216-821-11	METAL GLAZE 1K 5% 1/16W	
R729	1-216-864-11	METAL GLAZE 0 5% 1/16W	
R730	1-216-837-11	METAL GLAZE 22K 5% 1/16W	
R735	1-216-825-11	METAL GLAZE 2.2K 5% 1/16W	
R750	1-216-864-11	METAL GLAZE 0 5% 1/16W	
R754	1-216-864-11	METAL GLAZE 0 5% 1/16W	
R756	1-216-864-11	METAL GLAZE 0 5% 1/16W	
R758	1-216-864-11	METAL GLAZE 0 5% 1/16W	
R761	1-216-829-11	METAL GLAZE 4.7K 5% 1/16W	
R762	1-216-827-11	METAL GLAZE 3.3K 5% 1/16W	
R763	1-216-837-11	METAL GLAZE 22K 5% 1/16W	
R765	1-216-825-11	METAL GLAZE 2.2K 5% 1/16W	
R800	1-216-864-11	METAL GLAZE 0 5% 1/16W	
R810	1-216-841-11	METAL GLAZE 47K 5% 1/16W	
R811	1-216-821-11	METAL GLAZE 1K 5% 1/16W	
R812	1-216-821-11	METAL GLAZE 1K 5% 1/16W	
R813	1-216-821-11	METAL GLAZE 1K 5% 1/16W	
R850	1-216-827-11	METAL GLAZE 3.3K 5% 1/16W	
R851	1-216-864-11	METAL GLAZE 0 5% 1/16W	
R901	1-216-831-11	METAL GLAZE 6.8K 5% 1/16W	
R902	1-216-829-11	METAL GLAZE 4.7K 5% 1/16W	
R903	1-216-829-11	METAL GLAZE 4.7K 5% 1/16W	
R904	1-216-825-11	METAL GLAZE 2.2K 5% 1/16W	
R905	1-216-823-11	METAL GLAZE 1.5K 5% 1/16W	
R906	1-216-823-11	METAL GLAZE 1.5K 5% 1/16W	
R907	1-216-823-11	METAL GLAZE 1.5K 5% 1/16W	
R908	1-216-166-00	METAL GLAZE 47 5% 1/8W	
R909	1-216-166-00	METAL GLAZE 47 5% 1/8W	
R910	1-216-164-00	METAL GLAZE 39 5% 1/8W	
R911	1-216-845-11	METAL GLAZE 100K 5% 1/16W	
R912	1-216-833-11	METAL GLAZE 10K 5% 1/16W	
R913	1-216-813-11	METAL GLAZE 220 5% 1/16W	
R914	1-216-831-11	METAL GLAZE 6.8K 5% 1/16W	
R915	1-216-833-11	METAL GLAZE 10K 5% 1/16W	
R916	1-216-833-11	METAL GLAZE 10K 5% 1/16W	
R924	1-216-821-11	METAL GLAZE 1K 5% 1/16W	
R927	1-216-833-11	METAL GLAZE 10K 5% 1/16W	

VARIABLE RESISTOR

RV901	1-238-089-11	RES, ADJ CERMET 4.7K	
RV902	1-238-087-11	RES, ADJ CERMET 1K	

CRYSTAL

X501	1-577-467-21	VIBRATOR, CRYSTAL (16MHz)	
X502	1-567-827-11	VIBRATOR, CRYSTAL	

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Ref.No	Part No.	Description	Remark
	1-633-922-11	FP-249 FLEXIBLE BOARD	
	1-569-286-11	CONNECTOR, CARD EDGE 5P	

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	*A-7071-180-A	VK-10P BOARD, COMPLETE (AEP/UK MODEL)	
	*A-7071-256-A	VK-10P BOARD, COMPLETE (E/AU MODEL)	
		(Ref.No 7,000 Series)	
	1-633-983-11	FP-296 FLEXIBLE BOARD	
	1-633-980-11	FP-308 FLEXIBLE BOARD	

DIODE

D508	8-719-420-34	DIODE MA151K	
D509	8-719-940-45	DIODE MA159	

SWITCH

S500	1-572-078-11	SWITCH, TACTILE (REW)	
S503	1-572-078-11	SWITCH, TACTILE (FF)	
S504	1-572-078-11	SWITCH, TACTILE (STOP)	
S505	1-572-078-11	SWITCH, TACTILE (PAUSE)	
S506	1-572-078-11	SWITCH, TACTILE (TIME(NEXT))	
S507	1-572-078-11	SWITCH, TACTILE (DATE (+))	
S508	1-572-078-11	SWITCH, TACTILE (DATE SCREEN)	
S509	1-572-078-11	SWITCH, TACTILE (AGE/EVENT)	
S510	1-572-284-11	SWITCH, SLIDE (REC) (E/AU MODEL)	
S511	1-570-870-11	SWITCH, SLIDE (EDIT)	
S512	1-572-078-11	SWITCH, TACTILE (FRAME)	
S513	1-572-078-11	SWITCH, TACTILE (SLOW)	
S514	1-572-283-11	SWITCH, SLIDE (CAM/POWER OFF/VTR)	
S515	1-572-078-11	SWITCH, TACTILE (ZERO MEM)	
S516	1-572-078-11	SWITCH, TACTILE (COUNTER RESET)	
S520	1-572-078-11	SWITCH, TACTILE (PB)	

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	*1-633-936-21	LI-18P BOARD (Ref.NO 7,000 Series)	

CONNECTOR

CN961	1-565-874-11	PIN, CONNECTOR (PC BOARD) 2P	

BATTERY HOLDER

J902	1-550-104-11	HOLDER, BATTERY (LITHIUM)	

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When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description	Remark
	*A-7071-186-A	SW-124P BOARD, COMPLETE (Ref.No 3,000 Series)	

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CAPACITOR

Ref.No	Part No.	Description	Remark
C900	1-164-232-11	CERAMIC CHIP 0.01MF 10% 50V	

CONNECTOR

Ref.No	Part No.	Description	Remark
CN930	*1-566-761-11	PIN, CONNECTOR (PC BOARD) 6P	
CN931	1-575-570-11	CONNECTOR, FPC/FFC 6P	

DIODE

Ref.No	Part No.	Description	Remark
D900	8-719-977-34	DIODE DTZ12	
D901	8-719-977-34	DIODE DTZ12	
D902	8-719-940-45	DIODE MA159	
D903	8-719-977-34	DIODE DTZ12	
D904	8-719-977-34	DIODE DTZ12	
D905	8-719-404-46	DIODE MA110	
D906	8-719-404-46	DIODE MA110-TX	

JACK

Ref.No	Part No.	Description	Remark
J900	1-507-929-41	JACK (REMOTE)	
J901	1-565-276-11	JACK, ULTRA SMALL 1P (HEADPHONE)	

COIL

Ref.No	Part No.	Description	Remark
L900	1-410-369-11	INDUCTOR CHIP 1UH	
L901	1-410-369-11	INDUCTOR CHIP 1UH	
L903	1-410-192-51	INDUCTOR CHIP 1UH	
L904	1-410-369-11	INDUCTOR CHIP 1UH	
L905	1-410-369-11	INDUCTOR CHIP 1UH	

TRANSISTOR

Ref.No	Part No.	Description	Remark
Q900	8-729-901-01	TRANSISTOR DTC144EK	
Q901	8-729-902-XX	TRANSISTOR DTC114TK	

RESISTOR

Ref.No	Part No.	Description	Remark
R900	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R901	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R902	1-216-295-00	METAL GLAZE 0 5% 1/10W	

SWITCH

Ref.No	Part No.	Description	Remark
S900	1-570-870-11	SWITCH, SLIDE (STANDBY)	
S901	1-571-838-11	SWITCH, TACTIL (REC START/STOP)	

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Ref.No	Part No.	Description	Remark
	*1-633-941-21	CC-31P BOARD (Ref.No 2,000 Series)	

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CONNECTOR

Ref.No	Part No.	Description	Remark
CN511	1-569-363-21	CONNECTOR, FPC 15P	
CN512	1-566-529-11	CONNECTOR, FPC (ZIF) 13P	
CN513	1-566-527-11	CONNECTOR, FPC (ZIF) 11P	

MISCELLANEOUS

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Ref.No	Part No.	Description	Remark
	⚠1-466-230-21	CONVERTER UNIT, D/D	
	1-542-125-21	MICROPHONE (C-2027)	
	1-547-381-12	FILTER BLOCK, OPTICAL	
	1-547-422-11	LENS, ZOOM (VCL-8508XE)	
	1-569-347-11	CONNECTOR, FPC (TRANSLATION) 13P	
	1-572-253-11	SWITCH, SLIDE (ENCODER)	
	1-572-173-11	SWITCH, SLIDE (ENCODER)	
	1-628-060-12	FP-89 FLEXIBLE BOARD	
	1-628-061-12	FP-90 FLEXIBLE BOARD	
	1-634-011-11	FP-264 FLEXIBLE BOARD	
	1-808-505-12	SENSOR (DEW)	
	8-719-979-92	DIODE SPI-315-25-CD	
	8-741-509-51	IC SBX1509-51 (RP-77 (HIC) BOARD)	
D301	8-719-820-44	PHOTO COUPLER TLP907-0	
D302	8-719-940-81	DIODE GL452S	
D303	8-719-820-44	PHOTO COUPLER TLP907-0	
IC101	※8-752-604-72	IC ICX039AN-2 (CCD IMAGER)	
L901	⚠1-451-310-21	DEFLECTION YOKE (B/W)	
M902	8-835-331-01	MOTOR, DC U-22A (CAPSTAN)	
M903	A-7040-208-A	MOTOR ASSY, THREADING (LOADING)	
Q301	8-729-906-48	EE-TP109	
Q302	8-729-906-48	EE-TP109	
S901	1-572-286-31	SWITCH, PUSH (ZOOM)	
S302	1-572-298-11	SWITCH, PUSH	
S903	1-571-099-11	SWITCH	
⚠V901-1	1-546-085-11	CATHODE-RAY TUBE, B/W (M01KGG007WB)	
⚠V901-2	1-452-482-11	CRT ASSY (M91JYZ60WB)	

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ACCESSORIES AND PACKING MATERIALS

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Part No.	Description	Remark
1-465-395-81	COMMANDER, REMOTE (RMT-502)	
*3-340-514-01	BAG, PROTECTION	
3-701-627-00	BAG, POLYETHYLENE	
*3-744-867-01	CUSHION (UPPER)	
*3-744-868-01	CUSHION (LOWER)	
3-751-437-11	MANUAL, INSTRUCTION (ENGLISH)	(AEP/UK MODEL)
3-751-437-51	MANUAL, INSTRUCTION (FRENCH, GERMAN, SPANISH)	(AEP MODEL)
3-751-437-61	MANUAL, INSTRUCTION (DUTCH, ITALIAN, SWEDISH)	(AEP MODEL)
3-751-437-71	MANUAL, INSTRUCTION (ARABIC)	(AEP MODEL)
3-752-272-11	MANUAL, INSTRUCTION(ENGLISH)	(E/AU MODEL)
3-752-272-41	MANUAL, INSTRUCTION (FRENCH, GERMAN, SPANISH)	(E MODEL)
3-752-272-51	MANUAL, INSTRUCTION (ARABIC)	(E MODEL)
*3-764-631-12	INSTRUCTION, DEW CONDENSATION	

※For replacement of CCD imager, CD-20P board, complete and DT-77P board, complete read carefully the CAUTIONS FOR REPLACEMENT OF CCD IMAGER on page93.

When indicating parts by reference number, please include the board name.

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

Ref.No	Part No.	Description	Remark

**** ACCESSORIES AND PACKING MATERIALS (KIT) ****

Ref.No	Part No.	Description	Remark
	*1-571-164-21	SWITCH, ANTENA CHANGE(CABUL)(UK/E MODEL)	
	3-712-673-01	SCREW DRIVER (UK/E MODEL)	
	*3-741-532-02	CUSHION, ACC	
	3-741-582-01	BELT, SHOULDER	
	*3-742-864-01	LID, ACC CUSHION	
	3-744-883-81	INDIVIDUAL, CARTON	
	** AC-V35	AC POWER ADAPTOR	
	*** ANS-89E	SWITCH, ANTENA CHANGE (UK/E MODEL)	
	*** NP-66	BATTERY PACK (AEP/UK MODEL)	
	*** NP-66H	BATTERY PACK (E/AU MODEL)	
	*** RFU-89EA	RFU (UK/E MODEL)	
	*** RFU-90AS	RFU (AU MODEL)	
	*** RFU-90E	RFU (AEP MODEL)	

Note

** MARK PARTS IS AVAILABLE FOR REPAIR SERVICE.
*** MARK PARTS IS AVAILABLE AS AN OPTIONAL ACCESSORY.

****

HARDWARE LIST

****

SCREW

Ref.No	Part No.	Description	Remark
	7-621-281-15	SCREW +P 2X2	
	7-627-555-88	PRECISION SCREW +P 1.4X1.8	
	7-627-553-17	PRECISION SCREW +P 2X2 TYPE 3	
	7-627-553-37	PRECISION SCREW +P 2X3 TYPE 3	
	7-627-553-48	PRECISION SCREW +P 2X4 TYPE 3	
	7-627-553-68	PRECISION SCREW +P 2X6 TYPE 3	

STEEL BALL

Ref.No	Part No.	Description	Remark
	7-671-155-01	STEEL BALL 3.0	

****

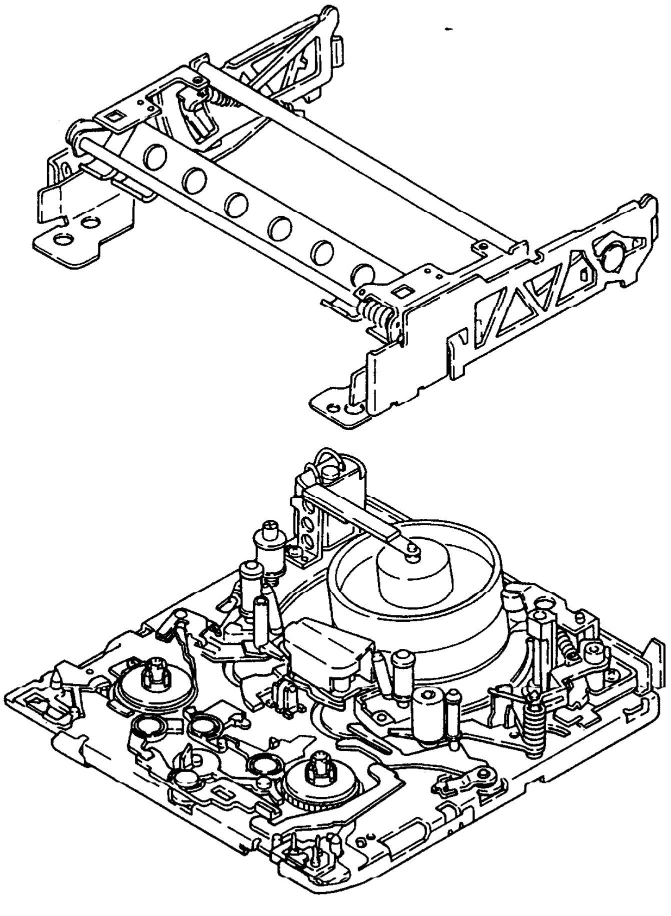
When indicating parts by reference number, please include the board name.

mm Video MECHANICAL ADJUSTMENT MANUAL III

U MECHANISM

Video 8

Please use in conjunction with the SERVICE MANUAL.



8 MECHANISM DECK

SONY

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1. PREPARATIONS FOR MECHANICAL BLOCK CHECK, ADJUSTMENT AND REPLACEMENT

Note: For removal of the cabinet, the boards, the cassette compartment, etc., refer to the service guides.

1-1. OPERATION WITHOUT CASSETTE COMPARTMENT ASSEMBLY AND TAPE

Note: The unit will not work if exposed to a strong light.

1-1-1. How to Trigger the Loading Operation (See Fig. 1-1.)

1) Supply power to the unit after removing the cabinet, the camera block, the cassette compartment assembly, etc., as indicated in the service guides. (This will enable operation of the mechanical deck.)
2) Cover the LED assembly with an opaque cap, etc. ❶.
3) Attach a piece of tape to the RECOG switch ❷ so that the pin is held down.
4) Push the EJECT lever ❸ in the direction of the arrow Ⓐ.

1-1-2. Setting the Playback Mode (See Fig. 1-1.)

1) Follow the procedures in section 1-1-1. above.
2) Put the rubber band ❹ around the S and T reels.
3) Press the PLAY switch of unit, then push the tension regulator arm assembly ❺ in the direction of the arrow Ⓑ when the T reel starts to rotate (the tension regulator band will be released, and the S reel will start rotating).
4) To stop operation, press the STOP switch.

1-1-3. Eject Operation (See Fig. 1-1.)

1) To eject, turn the EJECT switch on.

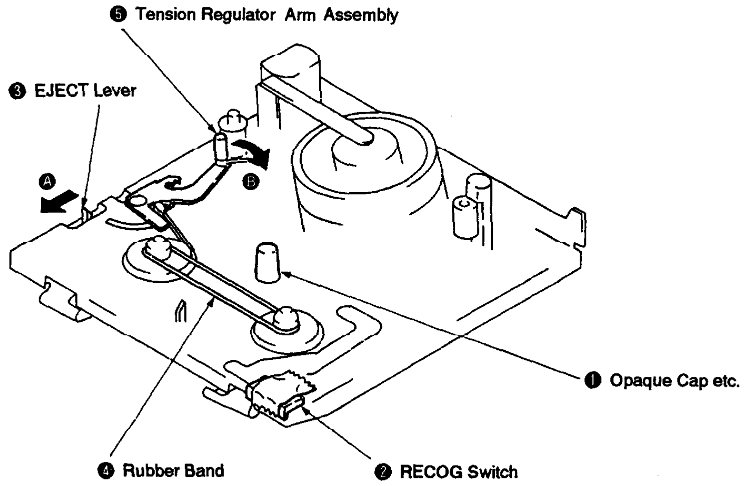


Fig. 1-1.

1-2. THE MODE SELECTOR

1-2-1. Name of Each Part (external) (See Fig. 1-2.)

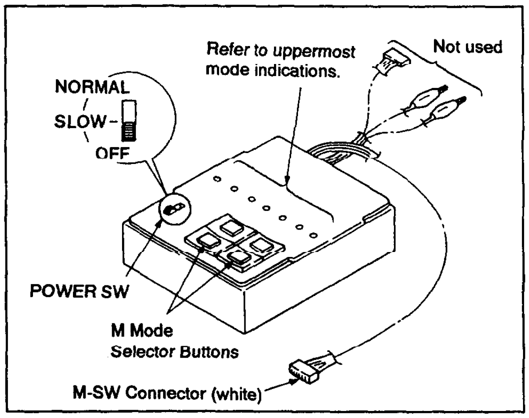

Refer to uppermost mode indications.
Not used
NORMAL
SLOW
OFF
POWER SW
M Mode Selector Buttons
M-SW Connector (white)

Fig. 1-2.

1-2-2. Connections (See Fig. 1-3.)

1) Mount the MODE SELECTOR III panel (Ref. No. J-9) ❶ onto the mode selector.
2) Attach the conversion connector (Ref. No. J-8) ❸ of MODE SELECTOR III to the 6-pin connector (white) ❷ of the mode selector M-SW.
3) Remove the FP-89 flexible board ❺ from the flexible connector ❹.
4) Attach the FP-89 flexible board ❺ to the flexible connector ❻ of the MODE SELECTOR III conversion connector ❸, then attach the 2-pin connector (white) ❽ of the loading motor to the 2-pin connector (white) ❼.

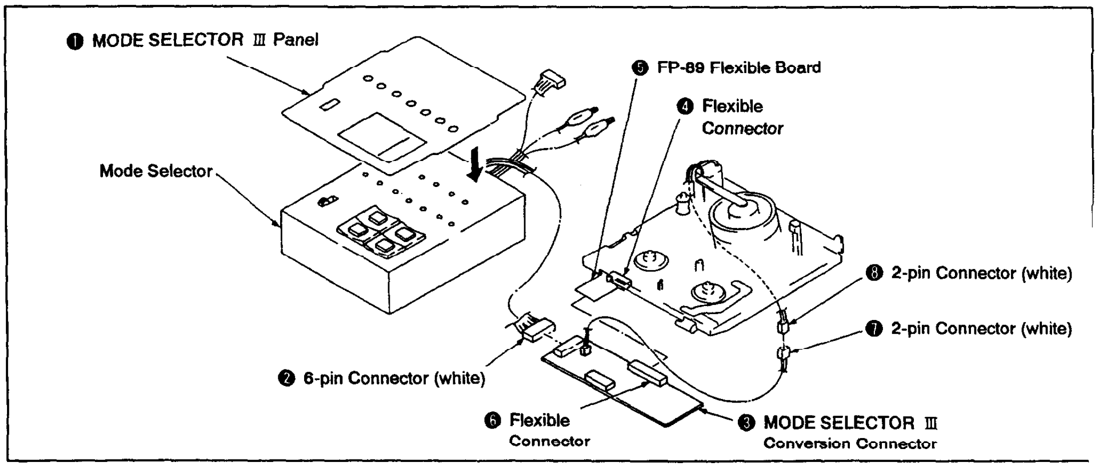

❶ MODE SELECTOR Ⅲ Panel
Mode Selector
❺ FP-89 Flexible Board
❹ Flexible Connector
❽ 2-pin Connector (white)
❼ 2-pin Connector (white)
❷ 6-pin Connector (white)
❻ Flexible Connector
❸ MODE SELECTOR Ⅲ Conversion Connector

Fig. 1-3.

1-2-3. Handling (See Figs. 1-2. and 1-4.)

- Use only the M mode selector buttons.
- Refer to mode indications on the uppermost part of the MODE SELECTOR III panel.
- If the right M mode selector button is kept pressed, the lit indication will change in the order of EJECT → (IA) → ULD → (IB) → STOP → (IC) → FWD.
- To change modes in the reverse direction (from FWD to EJECT), press the left selector button.

Note: For this U mechanism, the uppermost indicators on the MODE SELECTOR III panel are used. The IA, IB and IC indications light up during mode changes.

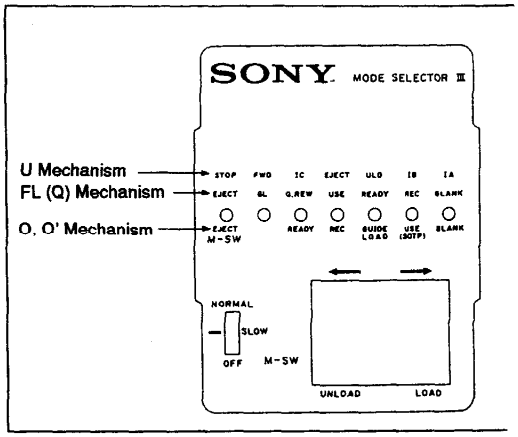

SONY
MODE SELECTOR Ⅲ
U Mechanism
FL (Q) Mechanism
O, O' Mechanism
STOP
FWD
IC
EJECT
ULD
IB
IA
EJECT
GL
Q.REW
USE
READY
REC
BLANK
EJECT
M-SW
READY
REC
GUIDE LOAD
USE (SOTP)
BLANK
NORMAL
SLOW
OFF
M-SW
UNLOAD
LOAD

Fig. 1-4.

2. PERIODICAL CHECK AND MAINTENANCE (See Fig. 2-1.)

The following periodical check and maintenance procedures are necessary to ensure proper operation and to protect the tapes as well as the unit, and the following maintenance procedures must be always carried out after repairing regardless of how long the unit has been used.

2-1. ROTARY DRUM ASSEMBLY CLEANING

1) While pressing a piece of chamois leather (Ref. No. J-2) moistened in cleaning fluid (Ref. No. J-1) lightly against the rotary drum, turn the rotary upper drum slowly counter-clockwise with your fingers.

Note: Do not drive the drum with the motor, and do not turn it clockwise.
Do not move the chamois leather vertically against the head tip; this can damage the head tip. Strictly follow the cleaning instructions above.

2-2. TAPE PATH CLEANING

1) Set the cassette compartment assembly to the eject state, or remove it. Then clean the tape path (guides No. 1 to 7, capstan shaft, pinch rollers) with a piece of chamois leather moistened in cleaning fluid (See Fig. 2-1).

2-3. DRIVE SYSTEM CLEANING

1) Clean the drive system (timing belt, reel table surface) with a piece of cloth moistened in cleaning fluid.

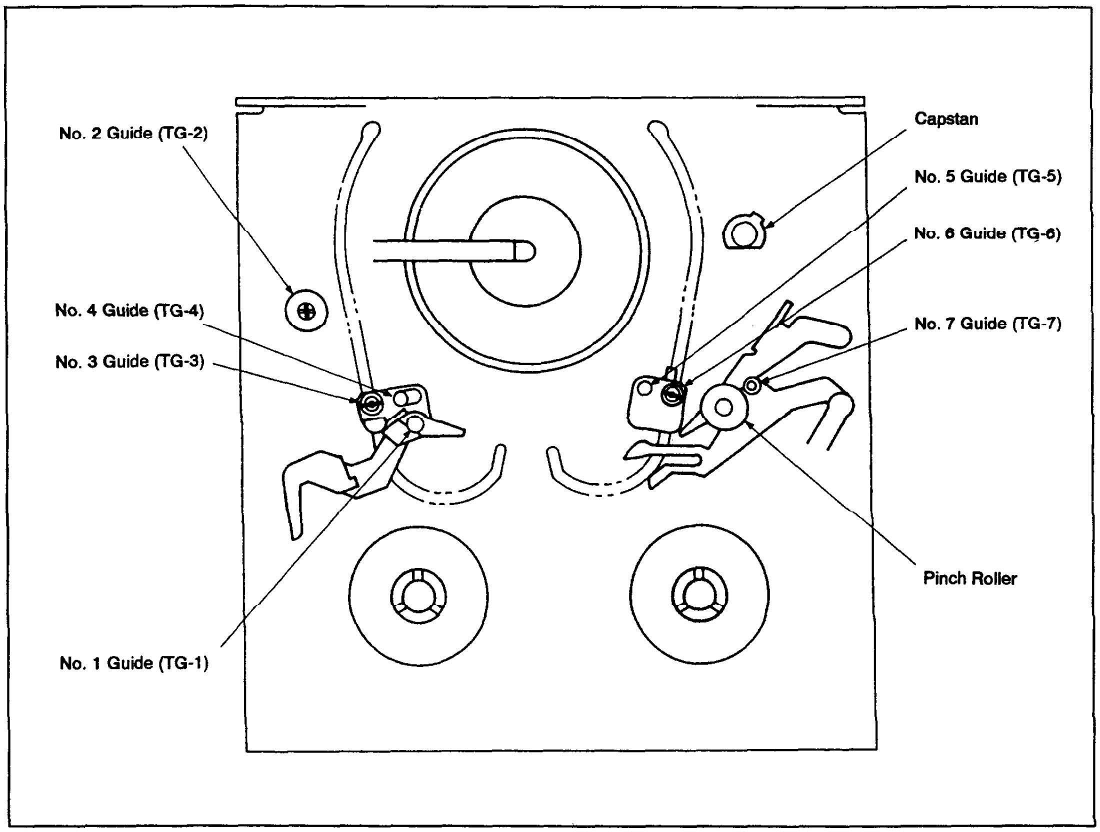


Fig. 2-1.

2-4. PERIODICAL CHECK ITEMS

○Cleaning ◎Lubrication ☆Check

Maintenance and Check Item		Operation time (H)										Remarks
		500	1,000	1,500	2,000	2,500	3,000	3,500	4,000	4,500	5,000	
Cleaning and Demagnetizing	Tape path surfaces Cleaning	○	○	○	○	○	○	○	○	○	○	Do not oil.
	Rotary drum assembly cleaning and demagnetizing	○	○	○	○	○	○	○	○	○	○	Do not oil.
Drive System	Relay belt (short)	–	☆	–	☆	–	☆	–	☆	–	☆	3-728-866-01
	Relay belt (long)	–	☆	–	☆	–	☆	–	☆	–	☆	3-728-865-01
	Capstan shaft	–	◎	–	◎	–	◎	–	◎	–	◎	Take care that no oil gets on tape path surfaces.
	Idler pulley axle	–	◎	–	◎	–	◎	–	◎	–	◎	
	Loading motor	–	☆	–	☆	–	☆	–	☆	–	☆	1-541-612-11
Performance Check	Abnormal noise	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	
	Back tension measurement	–	☆	–	☆	–	☆	–	☆	–	☆	
	Brake system	–	☆	–	☆	–	☆	–	☆	–	☆	
	FWD, RVS torque measurement	–	☆	–	☆	–	☆	–	☆	–	☆	

Notes: When overhauling the unit, perform parts replacement referring to the table above.

Regarding Oil:

- Always use the specified oil (using oil of different viscosity, etc. can cause troubles of several kinds).
  Specified oil: Part No. 7-661-018-01
  (Mitsubishi Diamond Oil Hydrofluid EP56)
- Be sure that no dirt is mixed in the oil to be used on axle bearings. Use of dirty oil can result in bearing wear and burning.
- By "one drop of oil" is meant the quantity of oil adhering to the end of a a 2mm-diameter rod as shown in Fig. 2-2.

On grease:

- Use the specified grease.
  Grease: Part No. 7-662-010-08
  (Sony grease SGL-701)

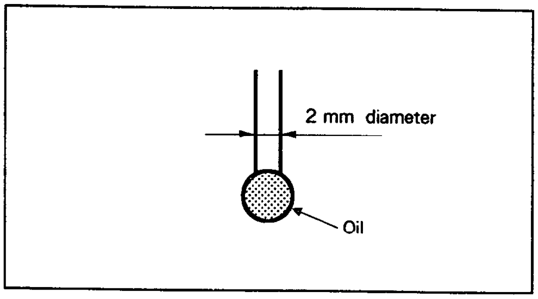


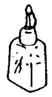
Fig. 2-2.

2-5. SERVICING TOOLS

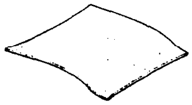
Ref. No.	Name	Part Code	Marking	Application, etc.
J-1	Cleaning fluid	Y-2031-001-0	–	
J-2	Chamois cloth	2-034-697-00	–	
J-3	Head demagnetizer	Commercially available	–	
J-4	Dental mirror Spare mirror	J-6080-029-A J-6080-030-1	SL-5052	Tape path
J-5	Alignment tape NTSC (WR5-1N) PAL (WR5-1C)	8-967-995-01 8-967-995-06		Tape path
J-6	FWD/RVS takeup torque cassette	J-6080-624-A	GD-2086	
J-7	Rotary drum jig	(Attached to the maintenance rotary upper drum)		
J-8	Mode selector III conversion connector	J-6082-021-A		General
J-9	Mode selector III panel	J-6082-023-A		General
J-10	Mode selector	J-6080-825-A		General
J-11	Hexagonal wrench detection (0.89 mm) or L wrench (0.89 mm)	7-700-766-01 7-700-736-06		Tape path
J-12	Sony grease (SGL-701)	7-662-010-08		

Other devices: Oscilloscope
Analog tester (20 kΩ)

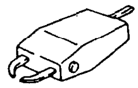
J-1



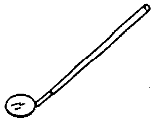
J-2



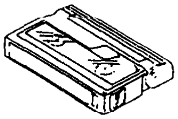
J-3



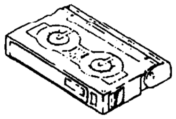
J-4



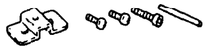
J-5



J-6

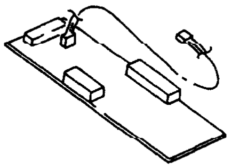


J-7

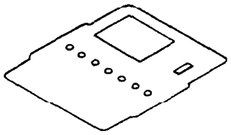


(Attached to the maintenance rotary upper drum)

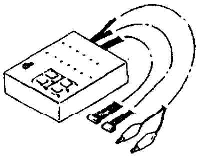
J-8



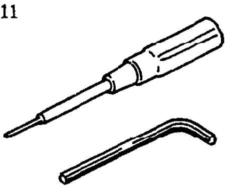
J-9



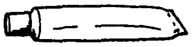
J-10



J-11



J-12



3. MECHANICAL BLOCK CHECK, ADJUSTMENT AND REPLACEMENT

Notes:
- Use the mode selector (Ref. No. J-10) for procedures in this chapter.
- Modes within a frame ☐ are those set by pressing the buttons of the mode selector.

3-1. HC ROLLER ASSEMBLY

1. Removal (See Fig. 3-1.)

1) Remove the screw ❶, then remove the HC roller assembly ❷.

2. Installation (See Fig. 3-1.)

1) Align the two dowels ❸ attached to the HC roller assembly ❷ with the two holes ❹ in the mechanism chassis.
2) Secure the HC roller assembly ❷ with the screw ❶.

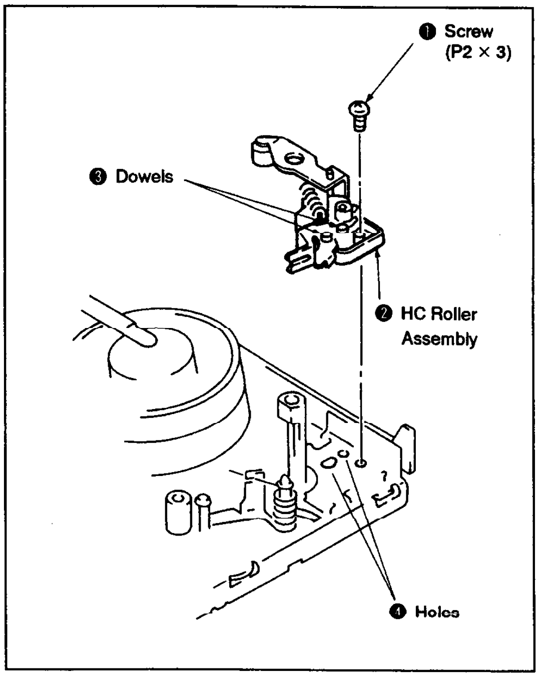

❶ Screw (P2 × 3)
❸ Dowels
❷ HC Roller Assembly
❹ Holes

Fig. 3-1.

3-2. GUIDE GUARD ASSEMBLY

1. Removal (See Fig. 3-2.)

Remove the screw ❶, then remove the guide guard assembly ❷.

2. Installation (See Fig. 3-2.)

1) Align the dowel ❸ attached to the guide guard assembly ❷ with the hole ❹.
2) Secure the guide guard assembly ❷ with the screw ❶.

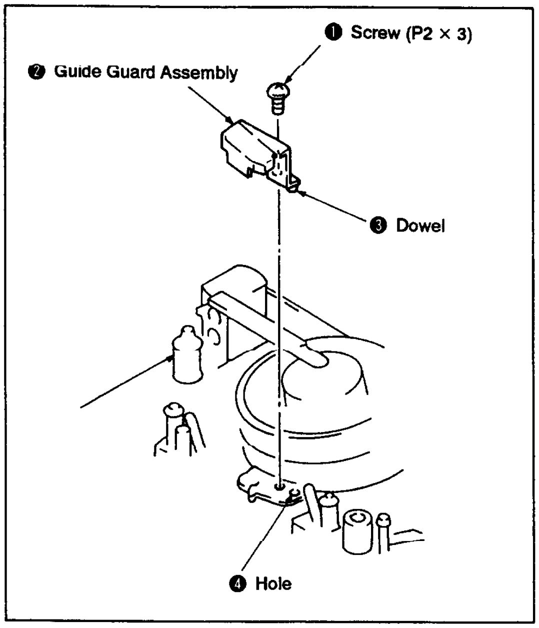

❶ Screw (P2 × 3)
❷ Guide Guard Assembly
❸ Dowel
❹ Hole

Fig. 3-2.

3-3. DC MOTOR (CAPSTAN MOTOR) ASSEMBLY

1. Removal (See Fig. 3-3.)

1) Set the ULD mode.
2) Turn the stopper ❶ in the direction of the arrow Ⓐ as far as it will go.
3) Remove the two screws ❷, then remove the DC motor ❸.

2. Installation (See Fig. 3-3.)

1) Align the two screwed dowels ❹ with the two holes ❺, then engage the toothed part ❻ with the connecting gear ❼.
2) Secure the DC motor assembly ❸ with the two screws ❷.
3) Turn the stopper ❶ in the direction of the arrow Ⓑ as far as it will go.

Note:
- When engaging the gears, take care not to damage their teeth.
- Do not leave any clearance between the DC motor ❸ and the chassis.
- Do not touch the capstan motor axle*, the oil seal* and the rotor*.

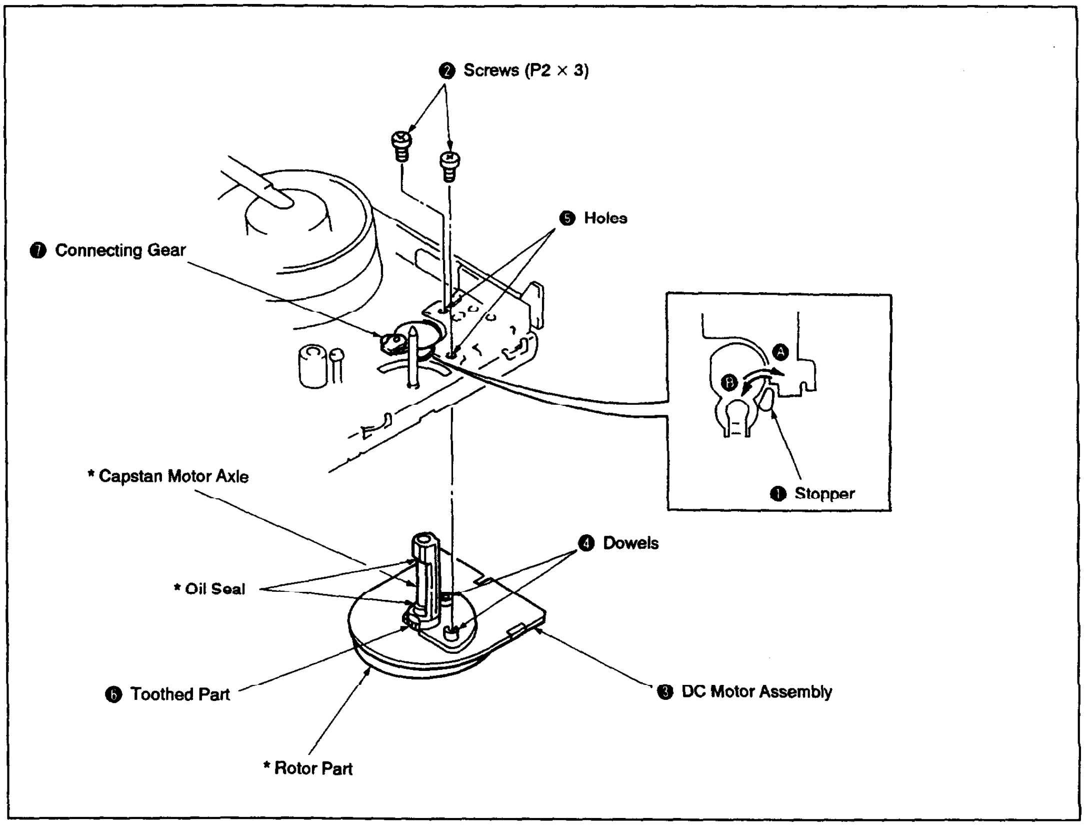

❷ Screws (P2 × 3)
❺ Holes
❼ Connecting Gear
Ⓐ
Ⓑ
❶ Stopper
* Capstan Motor Axle
❹ Dowels
* Oil Seal
❻ Toothed Part
❸ DC Motor Assembly
* Rotor Part

Fig. 3-3.

3-4. S BRAKE, T BRAKE

1. Removal (See Fig. 3-4.)

1) Remove the torsion coil spring (ST) ❶.
2) Remove the axle holding pin ❷, then remove the T brake ❸.
3) Remove the axle holding pin ❹, then remove the S brake ❺.

2. Installation (See Fig. 3-4.)

1) While fitting the toothed part ❻ into the notch ❼, mount the S brake ❺.
2) Insert the axle holding pin ❹.
3) Insert the axle ❽ to the S reel side of the brake release arm ❾ so that the Ⓐ part comes closer to the drum than part Ⓑ, and mount the T brake ❸.
4) Insert the axle holding pin ❷.
5) Insert the torsion coil spring (ST) ❶ below the claw ⓫ of the axle ❿, then hook it to two claws ⓬.

Note: Confirm that the claws of axle holding pins ❷ and ❹ are not broken before assembling.

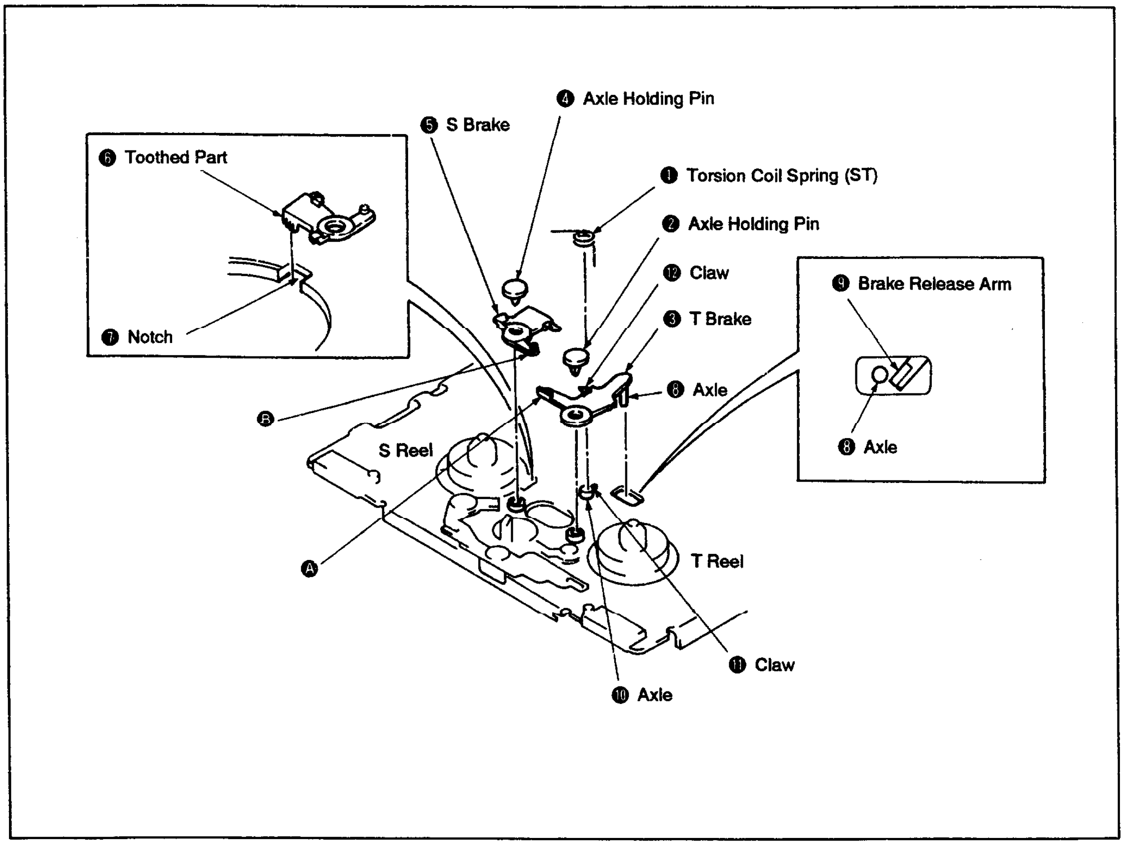

❹ Axle Holding Pin
❺ S Brake
❻ Toothed Part
❶ Torsion Coil Spring (ST)
❷ Axle Holding Pin
⓬ Claw
❾ Brake Release Arm
❸ T Brake
❼ Notch
❽ Axle
Ⓑ
S Reel
❽ Axle
Ⓐ
T Reel
⓫ Claw
❿ Axle

Fig. 3-4.

3-5. LB BRAKE, AXLE HOLDING PINS

1. Removal (See Fig. 3-5.)

1) Remove the screw ❶, then remove the TL holding plate ❷.
2) Remove the axle holding pin ❸, then remove the LB brake ❹.
3) Remove the axle holding pin ❺, then remove the LB lever ❻.

2. Installation (See Fig. 3-5.)

1) Mount the LB lever ❻ matching it to pin ❼ of the LB gear, then secure it with the axle holding pin ❺.
2) Insert the pin ❽ into the notch ❾ of the LB lever ❻, then mount the LB brake ❹ while inserting the toothed part ❿ into the notch ⓫.
3) Insert the axle holding pin ❸.
4) Align the dowel ⓬ with the hole ⓭, then mount the TL holding plate and secure it with the screw ❶.

Note: Confirm that the claws of axle holding pins ❸ and ❺ are not broken before assembling.

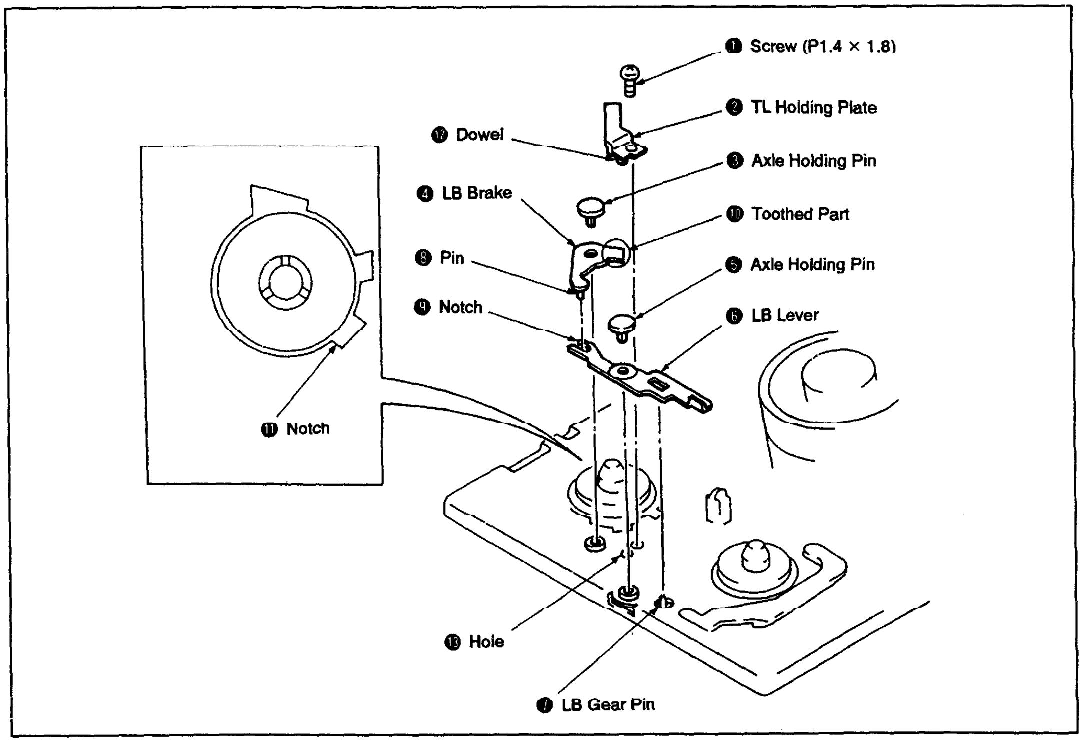

❶ Screw (P1.4 × 1.8)
❷ TL Holding Plate
⓬ Dowel
❸ Axle Holding Pin
❹ LB Brake
❿ Toothed Part
❽ Pin
❺ Axle Holding Pin
❾ Notch
❻ LB Lever
⓫ Notch
⓭ Hole
❼ LB Gear Pin

Fig. 3-5.

3-6. LB RELEASE ARM

1. Removal (See Fig. 3-6.)

1) While pushing the claw ❶ in the direction of the arrow, remove the LB release arm ❷.

2. Installation (See Fig. 3-6.)

1) Fit the LB release arm ❷ to the axle ❸, insert protrusions ⓐ, ⓑ, ⓒ, ⓓ into the three holes ❹, then secure with the claw ❶.

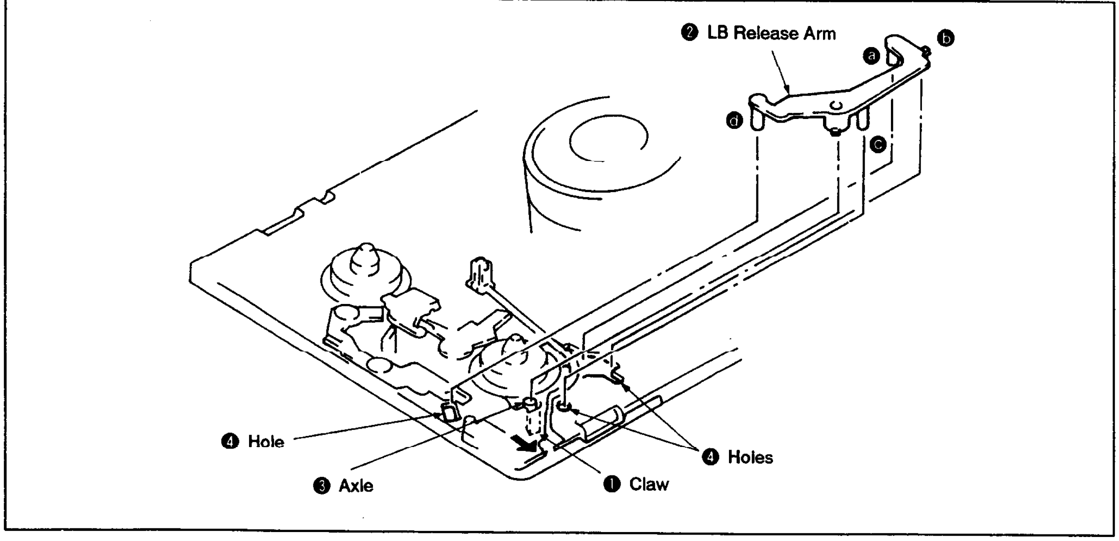

❷ LB Release Arm
ⓐ
ⓑ
ⓓ
ⓒ
❹ Hole
❸ Axle
❶ Claw
❹ Holes

Fig. 3-6.

3-7. RK STOPPER, RK STOPPER ARMS

1. Removal (See Fig, 3-7.)

1) Remove the torsion coil spring (RK) ❶.
2) Open the chassis claw ❷, then remove the RK stopper arm ❸.
3) Remove the RK stopper ❹.

2. Installation (See Fig. 3-7.)

1) Mount the RK stopper ❹ onto the axle ❺.
2) Mount the RK stopper arm ❸ onto the axle ❻, insert Pin ❿ into hole ⓫, then hook the claw ❷ of the chassis to the hole ❼.
3) Insert the torsion coil spring (RK) ❶ into the axle ❺, then hook it to claws ❽ and ❾.

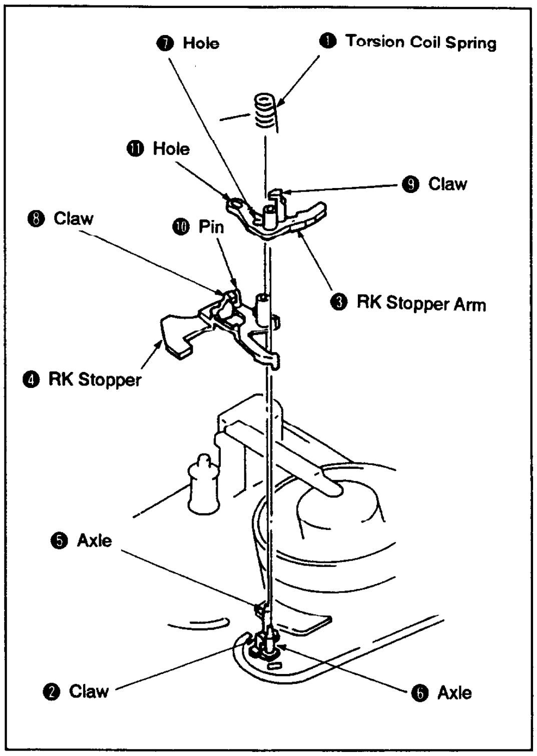

❼ Hole
❶ Torsion Coil Spring
⓫ Hole
❾ Claw
❽ Claw
❿ Pin
❸ RK Stopper Arm
❹ RK Stopper
❺ Axle
❷ Claw
❻ Axle

Fig. 3-7.

3-8. PINCH ARM ASSEMBLY, TG-7 ASSEMBLY

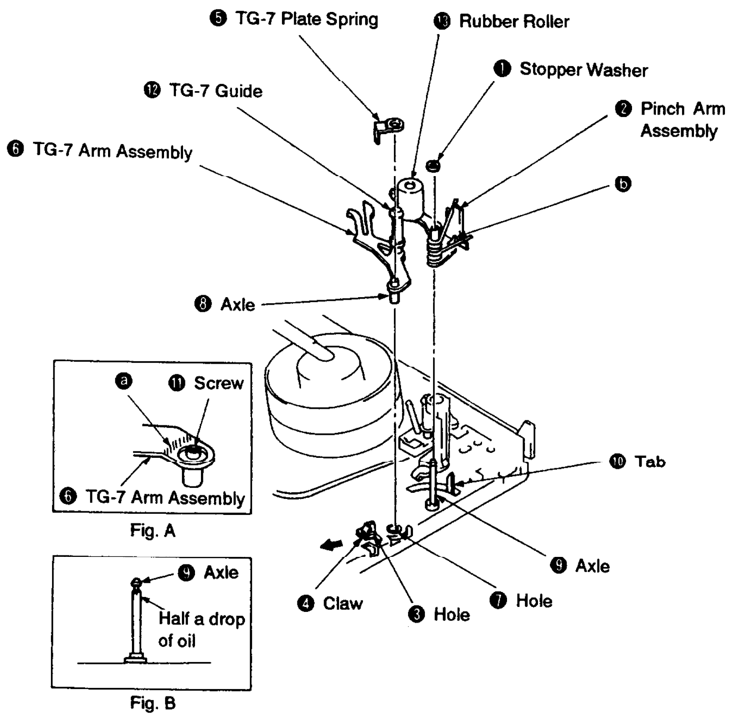
1. Removal (See Fig. 3-8.)

1) Set the $\boxed{\text{IB}}$ mode.
2) Remove the stopper washer ❶, then remove the pinch arm assembly ❷.
3) Bend the claw ❹ inside hole ❸ in the direction of the arrow using a thin screwdriver or the like, then remove the TG-7 plate spring ❺.
4) Remove the TG-7 arm assembly ❻.

2. Installation (See Fig. 3-8.)

1) Grease the inner surfaces of hole ❼ (See Fig. A).
2) Insert the axle ❽ of the TG-7 arm assembly ❻ into the hole ❼.
3) Grease the shaded section ⓐ (See Fig. A).
4) Insert the TG-7 plate spring ❺ into the hole ❸, then secure it with the claw ❹.
5) Apply half a drop of oil to the axle ❾ (See Fig. B).
6) Fit the pinch arm assembly ❷ to the axle ❾ and insert the pinch roller sub arm assembly tab ❿ into the ⓑ part.
7) Install the stopper washer ❶.

Note:
- Take care not to grease the screw ⓫ of the TG-7 arm assembly ❻ (See Fig. A).
- When fitting the pinch arm assembly ❷ to the axle ❾, make sure that it does not touch the TG-7 guide ⓬ or the rubber roller ⓭.
- After assembling, be sure to perform tape path adjustment as described in section 4.



❺ TG-7 Plate Spring
⓭ Rubber Roller
❶ Stopper Washer
⓬ TG-7 Guide
❷ Pinch Arm Assembly
❻ TG-7 Arm Assembly
ⓑ
❽ Axle
ⓐ
⓫ Screw
❻ TG-7 Arm Assembly
Fig. A
❿ Tab
❾ Axle
Half a drop of oil
Fig. B
❾ Axle
❹ Claw
❸ Hole
❼ Hole

Fig. 3-8.

3-9. TG-2 ASSEMBLY

1. Removal (See Fig. 3-9.)

1) Remove the TG-2 upper flange assembly ①.
2) Remove the TG-2 roller ②, the TG-2 sleeve ③, the TG-2 lower flange ④ and the compression spring ⑤.

2. Installation (See Fig. 3-9.)

1) Mount the compression spring ⑤, the TG-2 lower flange ④, the TG-2 sleeve ③ and the TG-2 roller ② to the axle.
2) Secure the TG-2 upper flange ① to the axle by rotating it 4 to 6 turns.

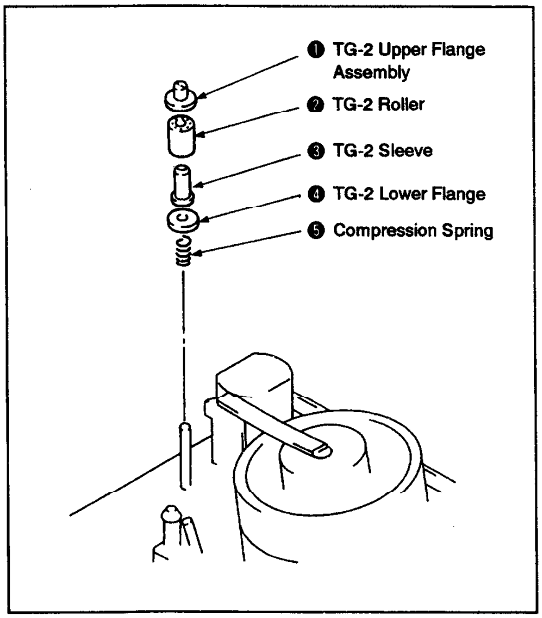

① TG-2 Upper Flange Assembly
② TG-2 Roller
③ TG-2 Sleeve
④ TG-2 Lower Flange
⑤ Compression Spring

Fig. 3-9.

3. TG-2 Height Preset (see Fig. 3-10.)

1) Adjust height from the mechanism chassis upper surface to the TG-2 upper flange ① upper surface to 18.6 mm by turning the TG-2 upper flange ①.

Note: After adjustment, be sure to perform tape path adjustment as described in section 4.

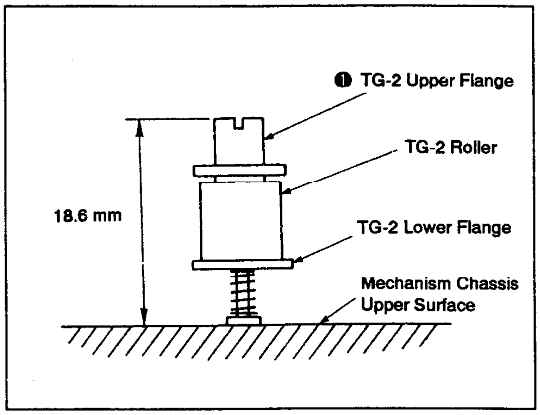

① TG-2 Upper Flange
TG-2 Roller
18.6 mm
TG-2 Lower Flange
Mechanism Chassis Upper Surface

Fig. 3-10.

3-10. S REEL TABLE ASSEMBLY, T REEL TABLE ASSEMBLY

1. Removal (See Fig. 3-11.)

1) Remove the S brake and T brake as described in section 3-4.
2) Remove the TL holding plate as described in section 3-5.
3) Remove the tension regulator band assembly as described in section 3-11.
4) Remove the S reel table assembly ❶.
5) Turn the stopper ❷ approx. 90 ° in the direction of the arrow Ⓐ.
6) While sliding the LB release arm ❸ in the direction of the arrow Ⓑ, remove the T reel table assembly ❹.

2. Installation (See Fig. 3-11.)

1) Apply half a drop of oil to the axle ❺ (See Fig. A).
2) Move the RK gear ❻ in the direction of the arrow Ⓒ and the TS brake ❼ in the direction of the arrow Ⓓ, putting them out of the way.
3) While sliding the LB release arm ❸ in the direction of the arrow Ⓑ, mount the T reel table assembly ❹ onto the axle ❺, then turn the stopper ❷ in the direction of the arrow Ⓔ as far as it will go.
4) Apply half a drop of oil to the axle ❽ (See Fig. B).
5) Move the RK gear ❻ in the direction of the arrow Ⓕ, the UL brake ❾ in the direction of the arrow Ⓖ and the LB brake ❿ in the direction of the arrow Ⓗ, putting them out of the way.
6) Mount the S reel table ❶ onto the axle ❽.
7) Mount the tension regulator band assembly as described in section 3-11.
8) Mount the TL holding plate as described in section 3-5.
9) Mount the S brake and T brake assemblies as described in section 3-4.

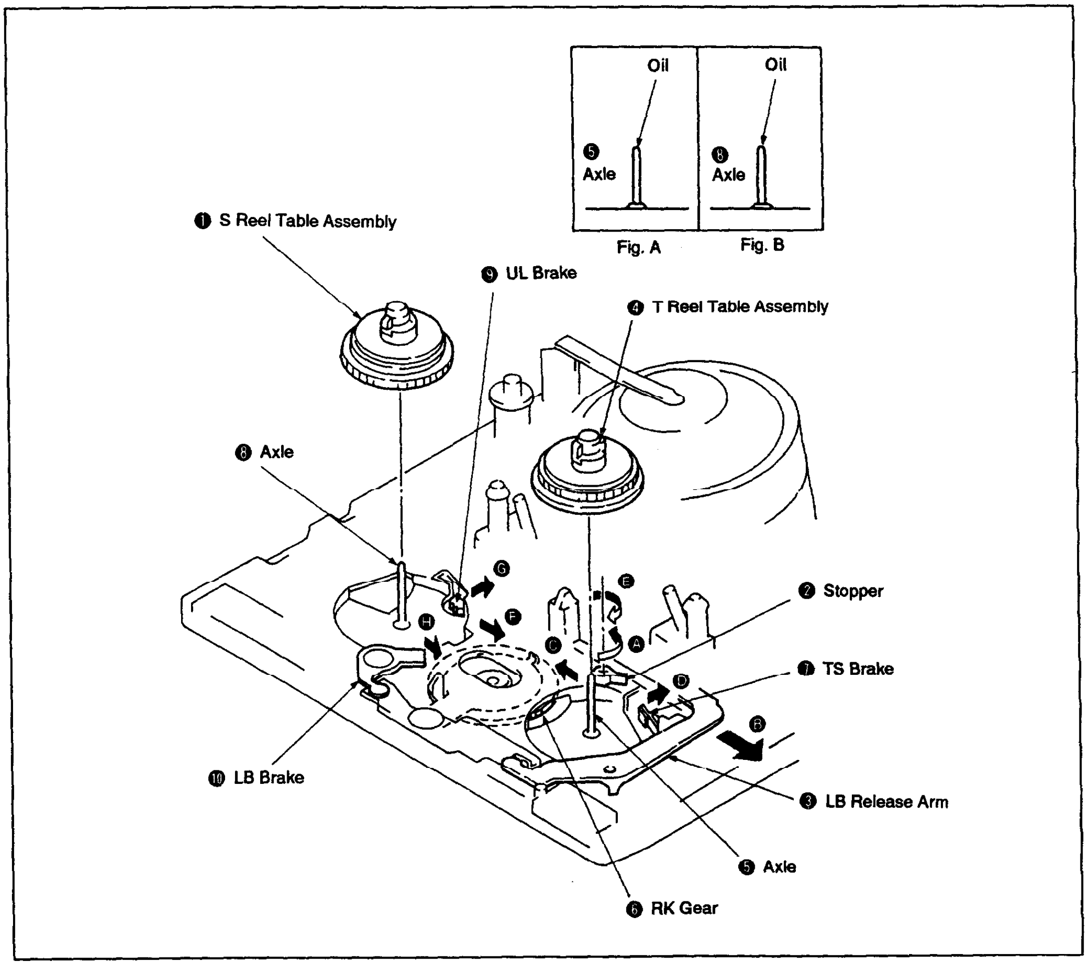

Oil
❺ Axle
Fig. A
Oil
❽ Axle
Fig. B
❶ S Reel Table Assembly
❾ UL Brake
❹ T Reel Table Assembly
❽ Axle
Ⓖ
Ⓕ
Ⓗ
Ⓔ
Ⓒ
Ⓐ
Ⓓ
Ⓑ
❷ Stopper
❼ TS Brake
❿ LB Brake
❸ LB Release Arm
❺ Axle
❻ RK Gear

Fig. 3-11.

3-11. TENSION REGULATOR BAND ASSEMBLY, TENSION REGULATOR ARM ASSEMBLY

1. Removal (See Fig. 3-12.)

1) Remove the TL holding plate as described in section 3-5.
2) Remove the screw ❶.
3) Using a thin screwdriver or the like, remove the tension regulator band assembly ❹ from the axle ❸ of tension regulator arm assembly ❷.
4) Remove the tension spring ❺.
5) Remove the stopper washer ❻ from the back of the mechanism chassis, then remove the tension regulator arm assembly ❷.
6) Open the claw ❼, then remove the adjust arm ❽.

Note: When removing the tension regulator band assembly ❹, take care not to twist or bend it, and not to touch the felt surface ❾.

2. Installation (See Fig. 3-12.)

1) Engage the adjust arm ❽ in the position shown in Fig. A, then close the claw ❼.
2) Apply half a drop of oil to the hole ❿.
3) Mount the tension regulator arm assembly ❷, then insert it into the slot ⓫ so that the ⓐ part comes to the arrow Ⓐ side of the switch lever assembly (See Fig. B).
4) While holding the tension regulator arm assembly ❷ from the mechanism chassis front, secure it with the stopper washer ❻ from the back.
5) Hook the R hook of the tension spring ❻ to the adjust arm ❽ as shown in the figure, then hook the opposite end to the tension regulator arm assembly ❷.
6) Mount the tension regulator band assembly ❹ onto the axle ❸ of tension regulator arm assembly ❷, and place it so that the felt surface ❾ comes against the shaded portion of the S reel table assembly ⓬.
7) Mount the tension regulator plate ⓭ of the tension regulator band assembly ❹ so that it is aligned with the dowel ⓮ of the mechanism chassis, then secure it temporarily with the screw ❶.
8) Mount the TL holding plate as described in section 3-5.
9) Adjust tension regulator FWD position as described in section 3-12.
10) Perform adjust arm adjustment as described in section 3-22.

Note: When mounting the tension regulator band assembly ❷, take care not to twist or bend it, and not to touch the felt surface ❾.

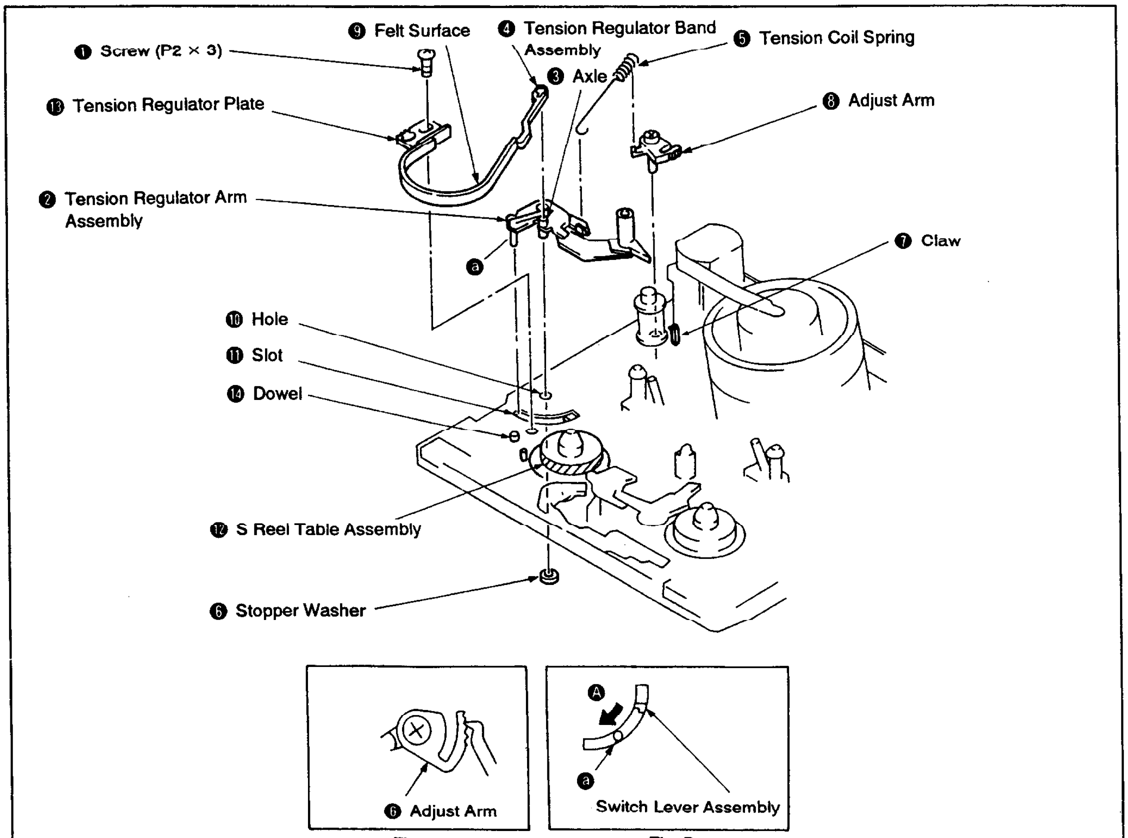

❶ Screw (P2 × 3)
❾ Felt Surface
❹ Tension Regulator Band Assembly
❸ Axle
❺ Tension Coil Spring
⓭ Tension Regulator Plate
❽ Adjust Arm
❷ Tension Regulator Arm Assembly
ⓐ
❼ Claw
❿ Hole
⓫ Slot
⓮ Dowel
⓬ S Reel Table Assembly
❻ Stopper Washer
❻ Adjust Arm
Ⓐ
ⓐ
Switch Lever Assembly

Fig. A

Fig. B

Fig. 3-12.

3-12. TENSION REGULATOR FWD POSITION PRESET (See Fig. 3-13.)

1) Load a cassette tape and set the FWD mode.
2) Confirm whether the distance between ⓐ part of the tension regulator arm ❶ and the groove ❷ of the chassis is 1.1 ± 0.3 mm. If this distance is not within the specified range, remove the cassette tape and perform the following adjustment.
3) Loosen the fixing screw ❹ of the tension regulator band assembly ❸.
4) Slide the tension regulator plate ❺ in the direction of the arrow Ⓐ if the measured distance is over the specified range, and in the direction of the arrow Ⓑ if it is under that range. Then, fix it with the screw ❹.
5) Repeat steps 1) and 2) and confirm that the distance is within the specified range.

Note: Use a cassette with the tape advanced halfway.

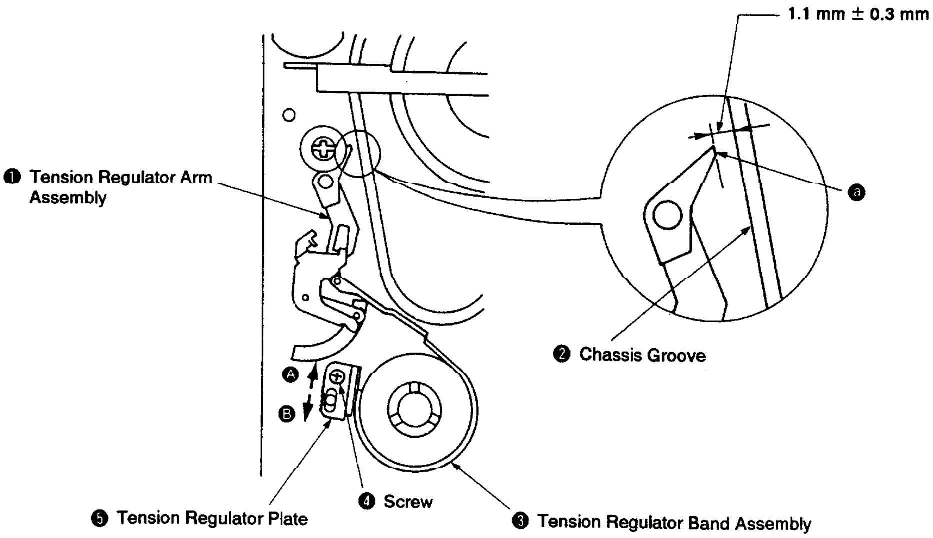

1.1 mm ± 0.3 mm
❶ Tension Regulator Arm Assembly
ⓐ
❷ Chassis Groove
Ⓐ
Ⓑ
❹ Screw
❺ Tension Regulator Plate
❸ Tension Regulator Band Assembly

Fig. 3-13.

3-13. DRUM ASSEMBLY, DEW SENSOR

1. Removal (See Fig. 3-14.)

1) Set the EJECT mode.
2) Remove the flexible board ❶ and the two connectors ❷.
3) Remove the guide guard assembly as described in section 3-2.
4) Remove the screw ❸, then remove the axle ground terminal ❹.
5) Remove the three screws ❺, then remove the drum assembly ❻ from the mechanism chassis.
6) Remove the connector ❿
7) Remove the screw ❼, then remove the dew sensor ❽.

Note:
- When removing the drum assembly ❻ from the mechanism chassis, take care not to cut the flexible board ❶ or the harness.
- Take care not to touch the head tip ❾.

2. Installation (See Fig. 3-14.)

1) Insert part 🅐 of the dew sensor ❽ into the notch ⓫ of the mechanism chassis, then secure it with the screw ❼.
2) Mount the connector ❿.
3) Clamp the harness ⓯ of the dew sensor ❽ with the reinforcing the claw ⓰ of the plate SS assembly (See Fig. A).
4) Insert the connector ❷ and the flexible board ❶ into the hole ⓬ of the mechanism chassis, align the drum assembly ❻ with the two dowels ⓭ and secure it with the three screws ❺.
5) Align the axle ground terminal ❷ with the two dowels ⓮ of the mechanism chassis and secure it with the screw ❸.
6) Mount the guide guard assembly as described in section 3-2.
7) Mount the two connectors ❷ and the flexible board ❶.

Note:
- Take care not to cut the flexible board ❶ or the harness ⓯.
- Take care not to touch the head tip ❾.
- After assembling, be sure to perform Tape Path Adjustment following instructions in section 4.

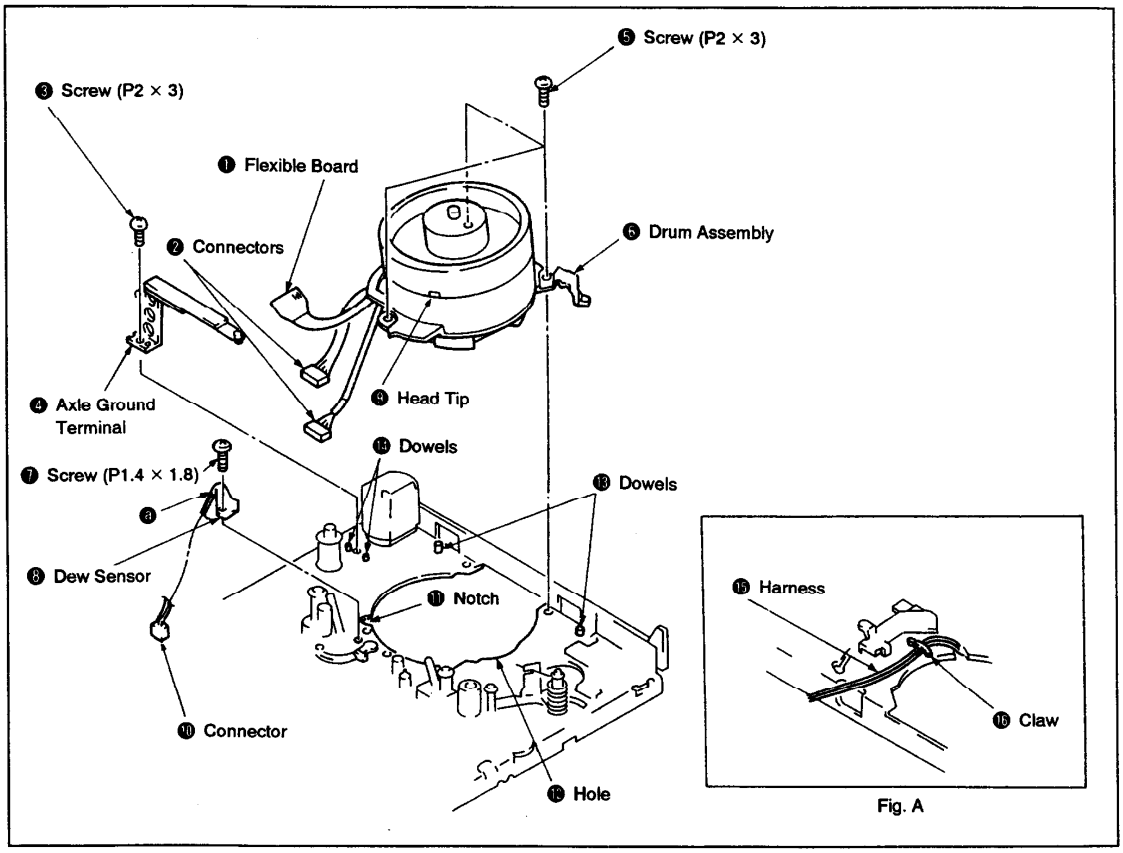

❺ Screw (P2 × 3)
❸ Screw (P2 × 3)
❶ Flexible Board
❷ Connectors
❻ Drum Assembly
❹ Axle Ground Terminal
❾ Head Tip
⓮ Dowels
❼ Screw (P1.4 × 1.8)
⓭ Dowels
🅐
❽ Dew Sensor
⓫ Notch
⓯ Harness
⓰ Claw
❿ Connector
⓬ Hole
Fig. A

Fig. 3-14.

3-14. EJECT LEVER, SWITCH LEVER ASSEMBLY, PINCH ROLLER SUB ARM ASSEMBLY

1. Removal (See Fig. 3-15.)

1) Remove the DC motor (capstan motor) as described in section 3-3.
2) Set the STOP mode.
3) Remove the claw ❶, then remove the eject lever ❷.
4) Remove the stopper washer ❸, then remove the switch lever assembly ❹.
5) Remove the pinch roller load spring ❺.
6) Remove the stopper washer ❻, then remove the pinch roller sub arm assembly ❼.

2. Installation (See Fig. 3-15.)

1) Grease the axle ❽ (See Fig. A).
2) Assemble by inserting ⓐ part of the pinch roller sub arm assembly ❼ into the slot ❾, then insert the pin ❿ into the loading lever assembly notch ⓫.
3) Secure with the stopper washer ❻.
4) Mount the pinch roller load spring ❺ by catching its ⓑ end between the claw ⓬ and the chassis side and its ⓒ end to the claw ⓬.
5) Apply half a drop of oil to the axle ⓭ (See Fig. B).
6) Align the groove ⓮ of the switch lever assembly ❹ with the mode detector switch protrusion ⓯, mount it on the axle ⓭, then insert the pin ⓰ into the drive gear (left) assembly ⓱ outer groove.
7) Secure with the stopper washer ❸.
8) Mount the eject lever ❷ and close the claw ❶.
9) Mount the DC motor (capstan motor) as described in section 3-3.

Note: When mounting the switch lever assembly ❹ onto the axle ⓭ with the tension regulator arm assembly installed, set the pin ⓰ to the arrow Ⓐ side of the switch lever assembly ❹.

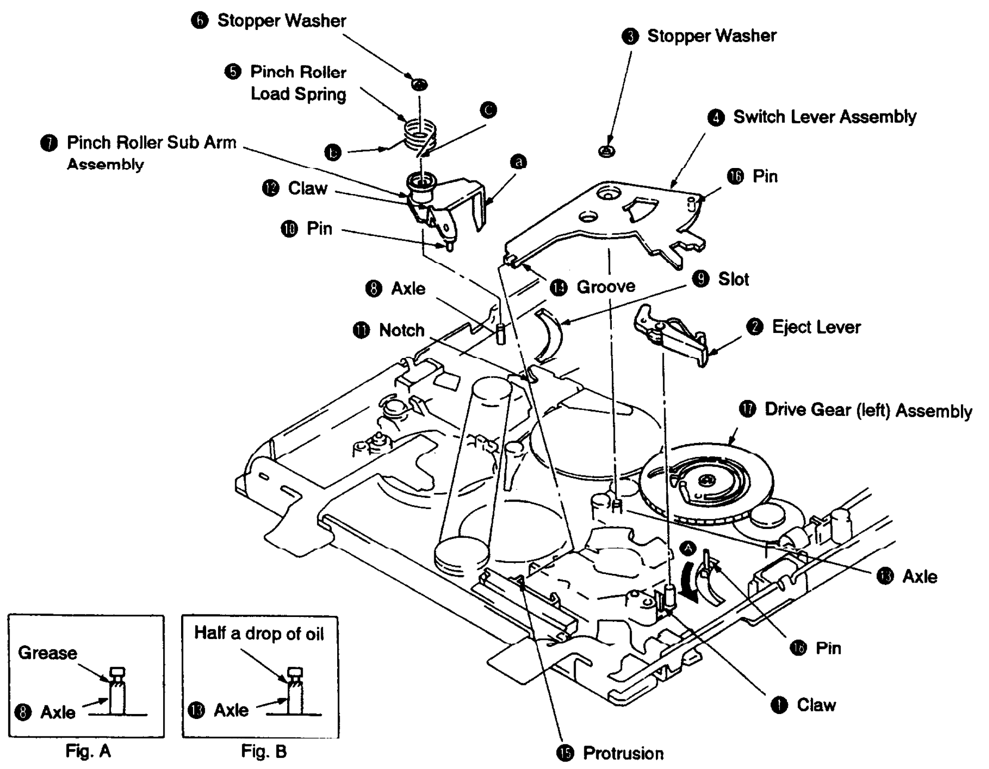

❻ Stopper Washer
❺ Pinch Roller Load Spring
ⓒ
❼ Pinch Roller Sub Arm Assembly
ⓑ
ⓐ
⓬ Claw
❿ Pin
❸ Stopper Washer
❹ Switch Lever Assembly
⓰ Pin
❽ Axle
⓮ Groove
❾ Slot
⓫ Notch
❷ Eject Lever
⓱ Drive Gear (left) Assembly
Ⓐ
⓭ Axle
⓰ Pin
❶ Claw
⓯ Protrusion
Grease
❽ Axle
Half a drop of oil
⓭ Axle

Fig. A

Fig. B

Fig. 3-15.

3-15. TIMING BELT (L) , RC GEAR ASSEMBLY, LOADING LEVER ASSEMBLY, TIMING BELT (S), CONNECTING GEAR ASSEMBLY

1. Removal (See Fig. 3-16.)

1) Remove the DC motor (capstan motor) as described in section 3-3.
2) Remove the pinch roller sub arm assembly as described in section 3-14.
3) Set the STOP mode.
4) Remove the stopper washer ❶ , then remove the RC gear assembly ❷ from the axle ❹ with the timing belt (L) ❸ attached.
5) Remove the timing belt (L) ❸ from the idler pulley assembly ❺.
6) Remove the stopper washer ❻ and remove the loading lever assembly ❽ while pushing the claw ❼ in the direction of the arrow Ⓐ.
7) Turn the stopper ❾ approx. 90 ° in the direction of the arrow Ⓑ.
8) Remove the connecting gear assembly ⓫ from the axle ⓰ with the timing belt (S) ❿ attached.
9) Remove the timing belt (S) ❿ from the idler pulley assembly ❺.

Note: When removing the connecting gear ⓫ , take care not touch the flange section ⓑ.

2. Installation (See Fig. 3-16.)

1) Apply half a drop of oil to the axle ⓰ (See Fig. F).
2) Hook one end of the timing belt (S) ❿ onto the connecting gear assembly ⓫ and the other end onto gear ⓓ of the idler pulley assembly ❺. (Refer to the figure.)
3) Mount the connecting gear assembly ⓫ with the timing belt (S) ❿ attached to the axle ⓰.
4) Turn the stopper ❾ in the direction of the arrow Ⓒ as far as it will go.
5) Apply half a drop of oil to the axle ⓬ (See Fig. A).
6) Fit the loading lever assembly ❽ to the axle ⓬, secure the ⓐ part with the claw ❼ and place the pin ⓭ into the groove of the drive gear (right) assembly ⓮.
7) Install the stopper washer ❻.
8) Place the timing belt (L) ❸ around the gears of the RC gear assembly ❷ indicated in Fig. B, and its opposite side around the gear ⓒ of the idler pulley assembly ❺. (See Fig. E.)
9) Mount the RC gear assembly ❷ onto the axle ❹ with the timing belt (L) ❸ attached, and engage it with the gear of the RK gear assembly ⓯.
10) Install the stopper washer ❶.
11) Grease parts of the loading lever assembly ❽ indicated in Fig. C.
12) Mount the pinch roller sub arm assembly as described in section 3-14.
13) Mount the DC motor (capstan motor) as described in section 3-3.

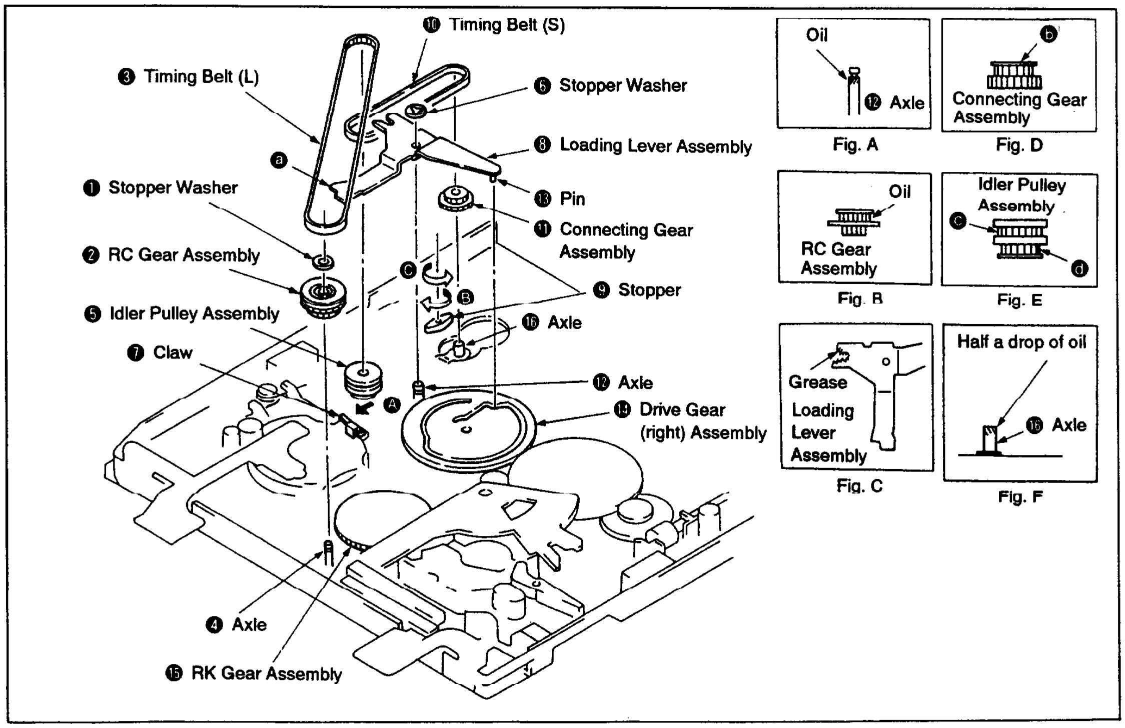

❿ Timing Belt (S)
❸ Timing Belt (L)
❻ Stopper Washer
❽ Loading Lever Assembly
ⓐ
❶ Stopper Washer
⓭ Pin
⓫ Connecting Gear Assembly
❷ RC Gear Assembly
Ⓒ
❾ Stopper
Ⓑ
❺ Idler Pulley Assembly
⓰ Axle
❼ Claw
⓬ Axle
Ⓐ
⓮ Drive Gear (right) Assembly
❹ Axle
⓯ RK Gear Assembly
Oil
⓬ Axle
ⓑ
Connecting Gear Assembly
Oil
RC Gear Assembly
Idler Pulley Assembly
ⓒ
ⓓ
Grease
Loading Lever Assembly
Half a drop of oil
⓰ Axle

Fig. A

Fig. D

Fig. B

Fig. E

Fig. C

Fig. F

Fig. 3-16.

3-16. IDLER PULLEY, TS BRAKE ASSEMBLY, LB GEAR ASSEMBLY, RK GEAR ASSEMBLY

1. Removal (See Fig. 3-17.)

1) Remove the DC motor (capstan motor) as described in section 3-3.
2) Remove the switch lever assembly as described in section 3-14.
3) Remove the timing belt (L), the RC gear assembly, the loading lever assembly, the timing belt (S) and the connecting gear assembly described in section 3-15.
4) Set the STOP mode.
5) Remove the stopper washer ❶, then remove the idler pulley ❷.
6) Open the claw ❸, then remove the TS brake assembly ❹.
7) Remove the torsion coil spring (LB) ❺.
8) Remove the stopper washer ❻, then remove the LB gear assembly ❼.
9) Remove the RK gear assembly ❽.

Note: When removing the idler pulley ❷, take care not to touch the flange section ⓐ. (See Fig. C.)

2. Installation (See Fig. 3-17.)

1) Apply half a drop of oil to the axle ❾ (See Fig. A).
2) Mount the RK gear assembly ❽ onto the axle ❾, keeping it in horizontal position.
3) Apply half a drop of oil to the axle ❿ (See Fig. B).
4) Mount the LB gear assembly ❼ onto the axle ❿ and secure it with the stopper washer ❻.
5) Insert the torsion coil spring (LB) ❺ into the axle ⓫, then hook it to the mechanism chassis notch ⓬ and to the tab ⓭.
6) Mount the TS brake assembly ❹ and close the claw ❸.
7) Apply half a drop of oil to the axle ⓮ (See Fig. D).
8) Mount the idler pulley ❷ onto the axle ⓮, then secure it with the stopper washer ❶.
9) Mount the timing belt (L), the RC gear assembly, the loading lever assembly, the timing belt (S) and the connecting gear assembly as described in section 3-15.
10) Mount the switch lever assembly as described in section 3-14.
11) Mount the DC motor (capstan motor) as described in section 3-3.

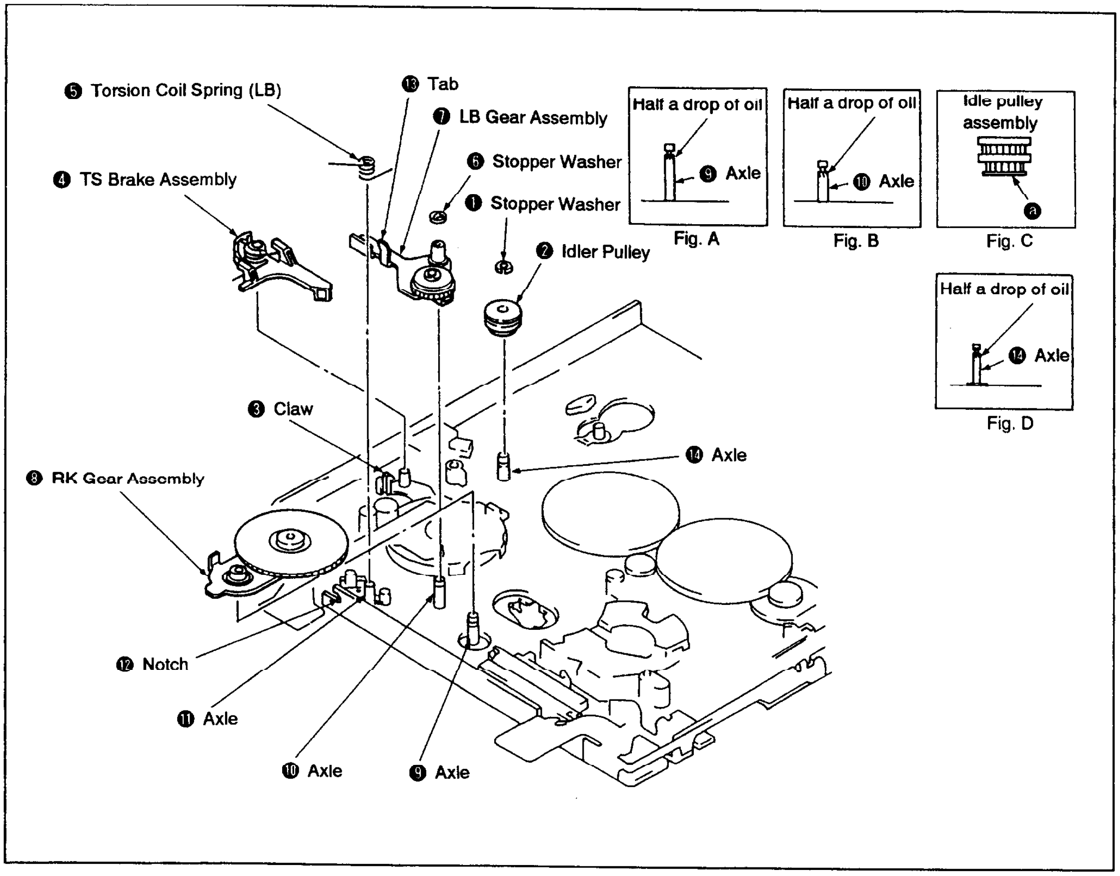

❺ Torsion Coil Spring (LB)
⓭ Tab
❼ LB Gear Assembly
❻ Stopper Washer
❶ Stopper Washer
❹ TS Brake Assembly
❷ Idler Pulley
❸ Claw
❽ RK Gear Assembly
⓮ Axle
⓬ Notch
⓫ Axle
❿ Axle
❾ Axle
Half a drop of oil
❾ Axle
Half a drop of oil
❿ Axle
Idle pulley assembly
ⓐ
Half a drop of oil
⓮ Axle

Fig. A

Fig. B

Fig. C

Fig. D

Fig. 3-17.

3-17. UL GEAR, UL BRAKE, UL ARM, LB PLATE SPRING

1. Removal (See Fig. 3-18.)

1) Remove the switch lever assembly as described in section 3-14.
2) Remove the stopper washer ❶, then remove the UL gear ❷.
3) Remove the UL arm ❸, the 1.6 mm-diameter poly washer ❹ and the LB plate spring ❺.
4) Remove the UL brake ❻.

2. Installation (See Fig. 3-18.)

1) Mount the UL brake ❻.
2) Apply half a drop of oil to the axle ❼ (See Fig. A).
3) Mount the LB plate spring ❺ to the axle ❼ as shown in Fig. B, then install the 1.6mm-diameter poly washer ❹.
4) Mount the UL arm ❸ to the axle ❼ so that the protrusion ❽ comes into the groove ❾ of the UL brake ❻.
5) Mount the UL gear ❷ to the axle ❼ and engage it with the gear of the drive gear (left) assembly ❿.
6) Install the stopper washer ❶.
7) Mount the switch lever assembly as described in section 3-14.

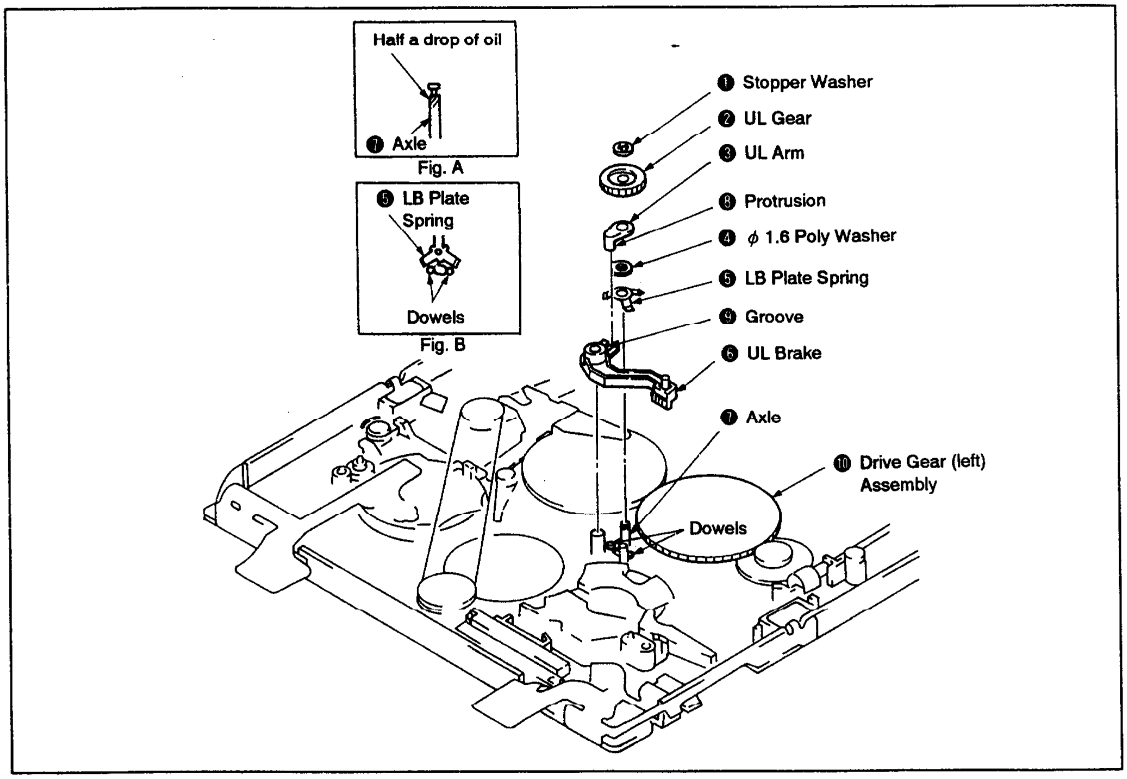

Half a drop of oil
❼ Axle
Fig. A
❺ LB Plate Spring
Dowels
Fig. B
❶ Stopper Washer
❷ UL Gear
❸ UL Arm
❽ Protrusion
❹ φ 1.6 Poly Washer
❺ LB Plate Spring
❾ Groove
❻ UL Brake
❼ Axle
❿ Drive Gear (left) Assembly
Dowels

Fig. 3-18.

3-18. COASTER (RIGHT) ASSEMBLY, DRIVE GEAR (RIGHT) ASSEMBLY

1. Removal (See Fig. 3-19.)

1) Remove the DC motor (capstan motor) as described in section 3-3.
2) Remove the drum unit as described in section 3-13.
3) Remove the switch lever assembly as described in section 3-14.
4) Remove the timing belt (L) , the RC gear assembly and the loading lever assembly as described in section 3-15.
5) Set the STOP mode.
6) Remove the screw ❶ , then remove the coaster plate spring ❷ and the coaster (right) assembly ❸ .
7) Remove the two screws ❹ , then remove the reinforcing plate TT ❺ .
8) Remove the stopper washer 1.5 ❻ , then remove the drive gear (right) assembly ❼ .

2. Installation (See Fig. 3-19.)

1) Grease the points of the mechanism chassis shown in Fig A.
2) Apply half a drop of oil to the axle ❽ (See Fig. F).
3) Grease pin ❾ , axle ❿ and dowel ⓮ of the coaster (right) assembly ❸ (See Fig. D).
4) Mount by aligning the pin ❾ and the axle ❿ with the slot ⓫ of the mechanism chassis.
5) Move the brake release arm ⓬ in the direction of the arrow Ⓐ to put it out of the way.
6) Mount the drive gear (right) assembly ❼ to the axle ❽ , and engage it with the drive gear (left) assembly ⓭ as shown in Fig. B.
7) Align the ⓐ part with the ⓑ part, and the hole ⓮ with the pin ❾ of the coaster (right) assembly ❸ .
8) Install the stopper washer 1.5 ❻ .
9) Mount by aligning the coaster plate spring ❷ with the axle ❿ of the coaster (right) assembly ❸ and pin ❾ , then secure with the screw ❶ .
10) Mount the reinforcing plate TT ❺ aligning it with the dowel ⓯, then tighten the two screws ❹ in the indicated order.
11) Grease the points indicated in Figs. C and E.
12) Mount the timing belt (L) , the RC gear assembly and the loading lever assembly as described in section 3-15.
13) Mount the switch lever assembly as described in section 3-14.
14) Mount the drum unit as described in section 3-13.
15) Mount the DC motor (capstan motor) as described in section 3-3.

Note:
- Screw ❶ should be tightened with a tightening torque of approx. 500g•cm. If tightened too much, the coaster (right) assembly ❸ and the coaster plate spring ❷ will be deformed.
- After installing, be sure to perform tape path adjustment as described in section 4.

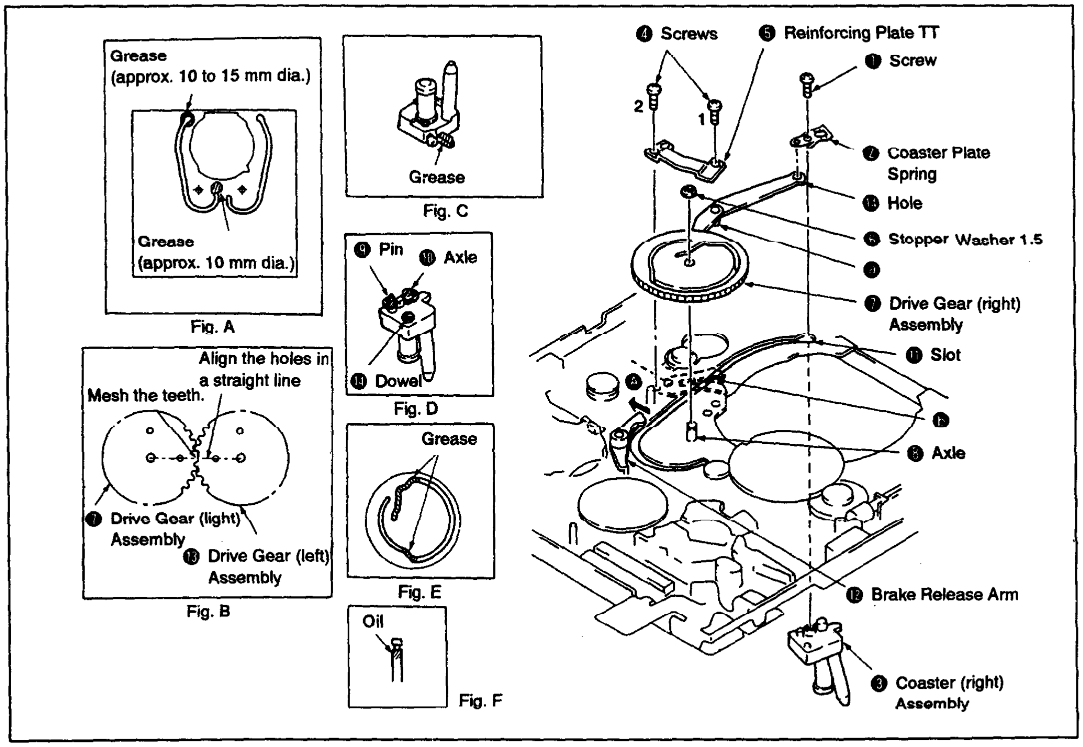

Grease
(approx. 10 to 15 mm dia.)
Grease
(approx. 10 mm dia.)
Fig. A
Grease
Fig. C
❾ Pin
❿ Axle
⓮ Dowel
Fig. D
Align the holes in a straight line
Mesh the teeth.
❼ Drive Gear (light) Assembly
⓭ Drive Gear (left) Assembly
Fig. B
Grease
Fig. E
Oil
Fig. F
❹ Screws
❺ Reinforcing Plate TT
❶ Screw
2
1
❷ Coaster Plate Spring
⓮ Hole
❻ Stopper Washer 1.5
ⓐ
❼ Drive Gear (right) Assembly
⓫ Slot
Ⓐ
ⓑ
❽ Axle
⓬ Brake Release Arm
❸ Coaster (right) Assembly

Fig. 3-19.

3-19. COASTER (LEFT) ASSEMBLY, DRIVE GEAR (LEFT) ASSEMBLY

1. Removal (See Fig. 3-20.)

1) Remove the DC motor (capstan motor) as described in section 3-3.
2) Remove the drum assembly as described in section 3-13.
3) Remove the switch lever assembly and the pinch roller sub-arm assembly as described in section 3-14.
4) Remove the timing belt (L), the RC gear assembly and the loading lever assembly as described in section 3-15.
5) Remove the coaster (right) assembly and the drive gear (right)assembly as described in section 3-18.
6) Remove the screw ❶, then remove the coaster plate spring ❷ and the coaster (left) assembly ❸.
7) Remove the two screws ❹, then remove the reinforcing plate SS assembly ❺.
8) Remove the stopper washer 1.5 ❻, then remove the drive gear (left) assembly ❼.

2. Installation (See Fig. 3-20.)

1) Grease the points of the mechanism chassis shown in Fig A.
2) Apply half a drop of oil to the axle ❽ (See Fig. E).
3) Grease pin ❾, axle ❿ and dowel ⓰ of the coaster (left) assembly ❸ (See Fig. B).
4) Mount by aligning the pin ❾ and the axle ❿ with the slot ⓫ of the mechanism chassis.
5) Fit the drive gear (left) assembly ❼ to the axle ❽, and mount so that the gear engages with the wheel gear ⓭ and the UL gear ⓮.
6) Align the ⓐ part with the slot ⓫, and the hole ⓮ with the pin ❾ of the coaster (left) assembly ❸.
7) Install the stopper washer 1.5 ❻.
8) Mount by aligning the coaster plate spring ❷ with the axle ❿ and pin ❾ of the coaster (left) assembly ❸, then secure with the screw ❶.
9) Mount the reinforcing plate SS assembly ❺ aligning it with the dowel ⓯, then tighten the two screws ❹ in the indicated order.
10) Grease points indicated in Figs. C and D.
11) Mount the coaster (right) assembly and the drive gear (right)assembly as described in section 3-18.
12) Mount the timing belt (L), the RC gear assembly and the loading lever assembly as described in section 3-15.
13) Mount the switch lever assembly and the pinch roller sub arm assembly as described in section 3-14.
14) Mount the drum assembly as described in section 3-13.
15) Mount the DC motor (capstan motor) as described in section 3-3.

Note:
- Screw ❶ should be tightened with a tightening torque of approx. 500g•cm. If tightened too much, the coaster (right) assembly ❸ and the coaster plate spring ❷ will be deformed.
- After installing, be sure to perform tape path adjustment as described in section 4.

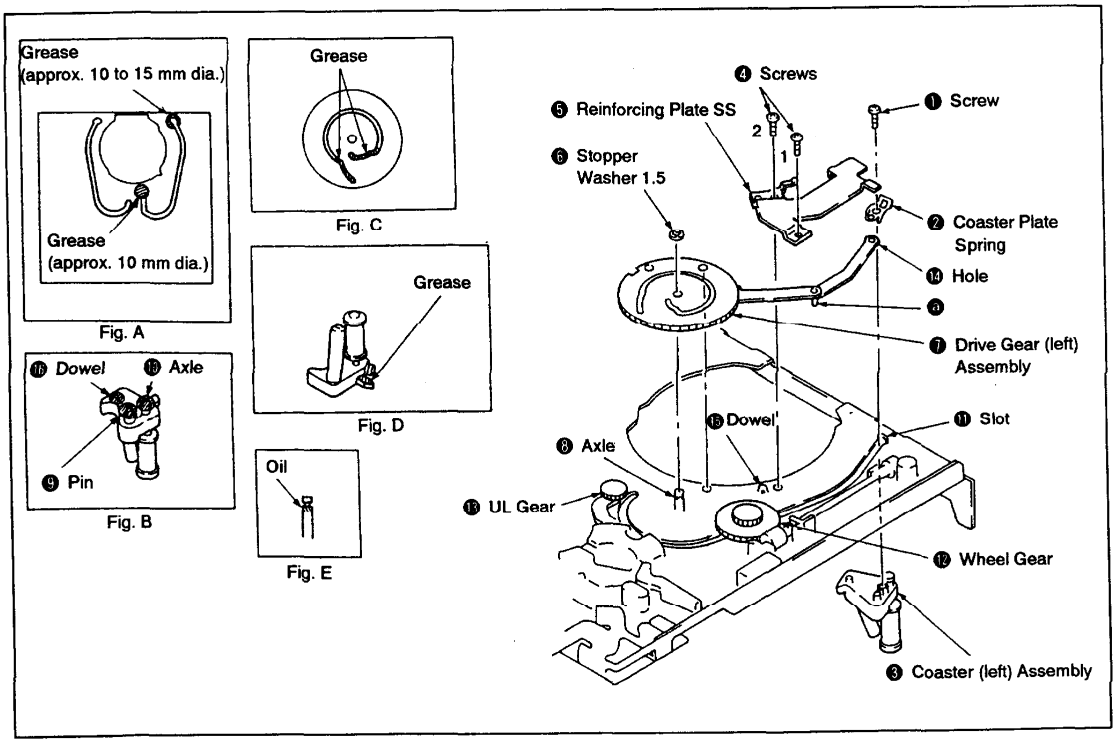


Fig. A
Fig. B
Fig. C
Fig. D
Fig. E
Grease
(approx. 10 to 15 mm dia.)
Grease
(approx. 10 mm dia.)
⓰ Dowel
❿ Axle
❾ Pin
Grease
Grease
Oil
❹ Screws
❺ Reinforcing Plate SS
2
1
❶ Screw
❻ Stopper Washer 1.5
❷ Coaster Plate Spring
⓮ Hole
ⓐ
❼ Drive Gear (left) Assembly
⓯ Dowel
⓫ Slot
❽ Axle
⓭ UL Gear
⓬ Wheel Gear
❸ Coaster (left) Assembly

Fig. 3-20.

3-20. LOADING MOTOR, BRAKE RELEASE ARM, WHEEL GEAR, WORM ASSEMBLY

1. Removal (See Fig. 3-21.)

1) Remove the DC motor (capstan motor) as described in section 3-3.
2) Remove the switch lever assembly and the pinch roller sub arm assembly as described in section 3-14.
3) Remove the timing belt (L), the RC gear assembly and the loading lever assembly as described in section 3-15.
4) Remove the drive gear (right) assembly as described in section 3-18.
5) Remove the drive gear (left) assembly as described in section 3-19.
6) Remove the two screws ❶, then remove the loading motor assembly ❷.
7) Remove the brake release arm ❸.
8) Remove the stopper washer ❹, then remove the wheel gear ❺.
9) Remove the worm assembly ❻ from the six claws ❼.

2. Installation (See Fig. 3-21.)

1) Mount the worm assembly ❻, matching it to the six claws ❼.
2) Grease the shaded parts of the worm assembly ❻ (five places) (see Fig A).
3) Apply half a drop of oil to the axle ❽ (See Fig. B).
4) Fit the wheel gear ❺ to the axle ❽ and engage it with the gear of the worm assembly ❻.
5) Mount the brake release arm ❸.
6) Grease the whole perimeter of the gear of the loading motor assembly ❷.
7) Align the loading motor assembly ❷ with the mechanism chassis and secure it with the two screws ❷.
8) Mount the drive gear (left) assembly as described in section 3-19.
9) Mount the drive gear (right) assembly as described in section 3-18.
10) Mount the timing belt (L), the RC gear assembly and the loading lever assembly as described in section 3-15.
11) Mount the switch lever assembly and the pinch roller sub arm assembly as described in section 3-14.
12) Mount the DC motor (capstan motor) as described in section 3-3.

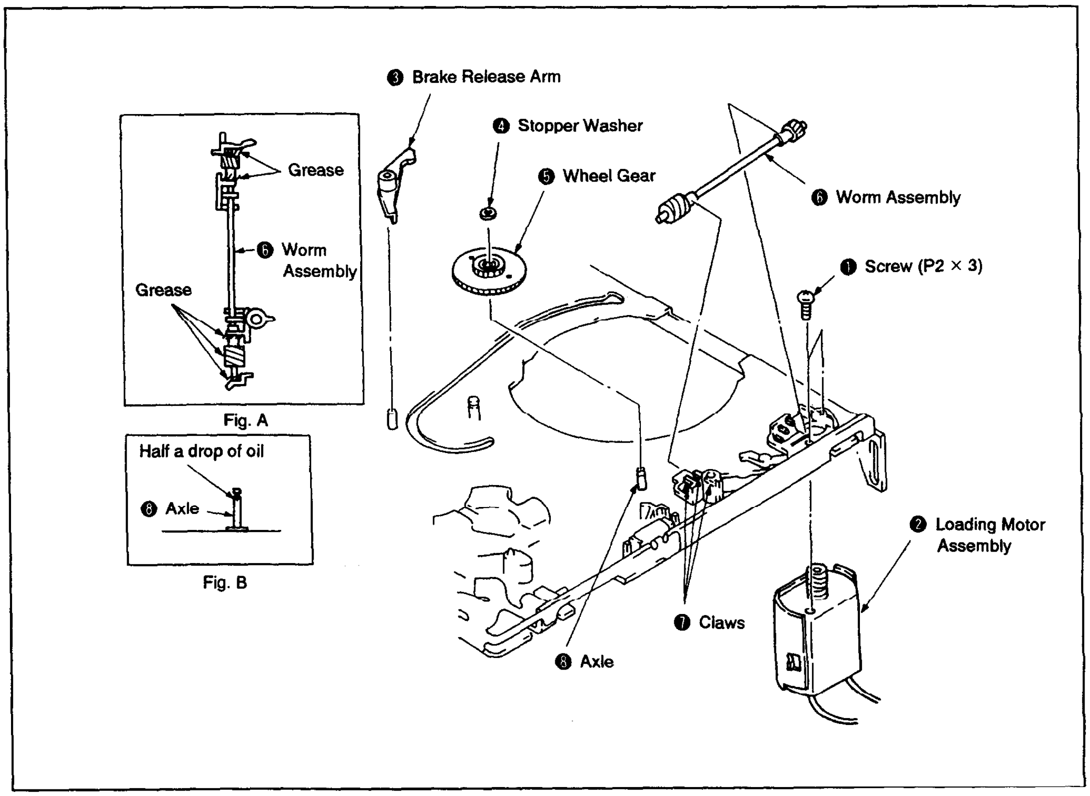

❸ Brake Release Arm
❹ Stopper Washer
❺ Wheel Gear
❻ Worm Assembly
❶ Screw (P2 × 3)
❷ Loading Motor Assembly
❼ Claws
❽ Axle
Grease
❻ Worm Assembly
Grease
Fig. A
Half a drop of oil
❽ Axle
Fig. B

Fig. 3-21.

3-21. ROTARY UPPER DRUM REPLACEMENT

1. Removal

- If possible, make a recording before removal.

1) Detach the six solderings ⓐ, then use a pair of tweezers or the like to confirm that the terminals passing through the board holes from below can move freely.
2) Remove the two screws ❶ (See Fig. 3-22).
3) Mount the jig ❹ (Ref. No. J-7) with the two supplied screws ❷, then screw the attached hexagon socket screws ❸ to the jig ❹. The rotary upper drum ❺ will move upward and come off (See Fig. 3-23).

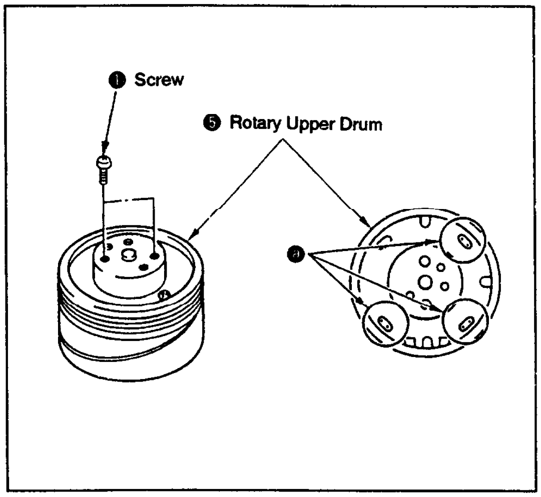


Fig. 3-22.

2. Installation

1) Wipe clean the flange surface and the rotary upper drum ❺ surface that makes contact with it, and confirm that they are free from dirt and scratches.
2) Insert the jig ❼ (Ref. No. J-7) into the drum positioning hole, then set the rotary upper drum ❺ by passing the jig through its positioning hole ❻.

   Note: Confirm that the terminals ❽ protrude slightly from the rotary upper drum board holes (See Fig. 3-24).
3) Remove the jig ❼ and push down the rotary upper drum ❺ gently by hand. If it does not go all the way down, secure it temporarily by tightening the two hexagon socket screws ❶ alternately.
4) Insert the jig ❼ into the positioning hole ❻ again and confirm that it goes in smoothly. If it does not, loosen the two screws ❶, repeat step 3 of the Removal paragraph and restart the setting procedure.
5) Tighten the screws ❶.
6) Solder the terminals ❽ (ⓐ in Fig. 3-22).

   Note: Take care that no solder flows below the board.

Note: After installing, be sure to perform tape path adjustment as described in section 4.

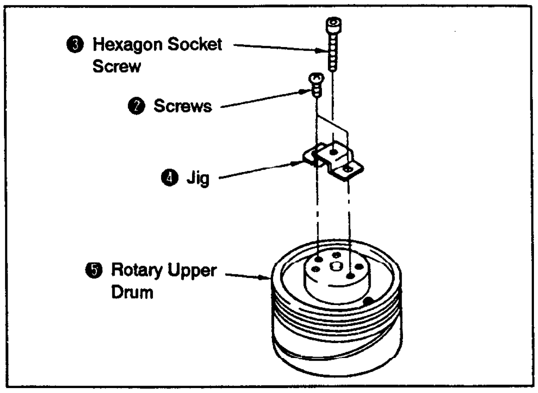


Fig. 3-23.

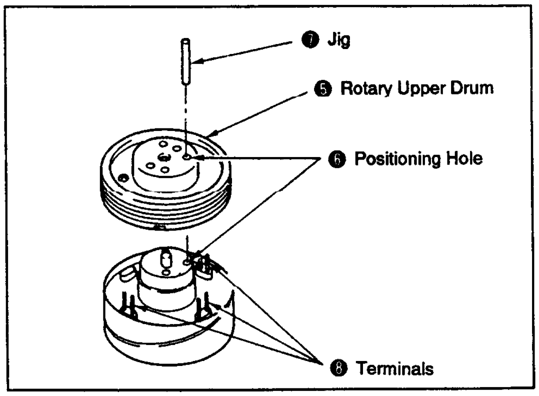


Fig. 3-24.

3-22. FWD BACK TENSION (See Fig. 3-25.)

1) Set the torque cassette (Ref. No. J-6).
2) Set the FWD mode and confirm that S reel table torque value is within 9 to 13 g•cm.
3) If the torque value does not meet the specification, adjust the adjust arm ❶.

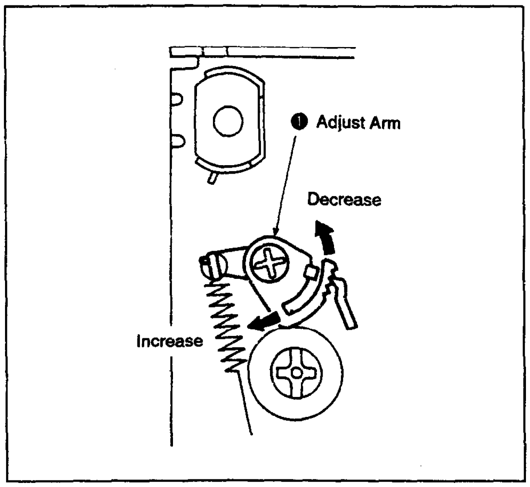


Fig. 3-25.

3-23. REEL TORQUE CHECK

1) Set the torque cassette.
2) Set the FWD mode and confirm that T reel table torque value is within 7 to 15 g•cm.
3) Set the REV mode and confirm that S reel table torque value is within 29 ± 6 g•cm.
4) Set the REV mode and confirm that T reel table torque value is within 13 to 25 g•cm.
5) If a torque value does not meet the specifications above, replace the corresponding reel table.

4. TAPE PATH ADJUSTMENT

[The Track Shift Mode]

In the 8 mm video system, instantaneous tape speed control is performed using four kinds of pilot signals, and high-precision tracking is achieved through the ATF (Automatic Track Finding) system. This makes a tracking control knob unnecessary and allows for precise tracing.

On the other hand, however, tape path adjustment presents some difficulties when the ATF system is used. Namely, since the ATF system will automatically compensate to some degree for head tracing errors, thorough adjustment is not possible.

This can be solved by setting the track shift mode for tracking fine adjustment. ATF will be compulsorily activated, shifting the tracking amount by a fixed amount (approx. 1/4) and thus making tracking fine adjustment easy. Furthermore, no track shift jigs are required.

4-1. TRACK SHIFT MODE SETTING

[Setting Procedure]

- Connect the TEST A and TEST B terminals to the COM terminal.
  Example:
  NTSC ········ GV-8
  PAL ·········· GV-8E
  Connect Pins ① and pin ③ of CN017 on the { SV-34 board (GV-8) / SV-35 board (GV-8E) } to pin ② of it. (See Fig. 4-1)

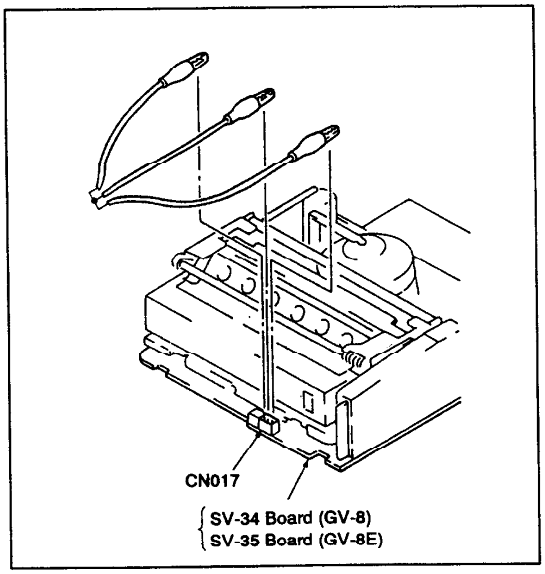
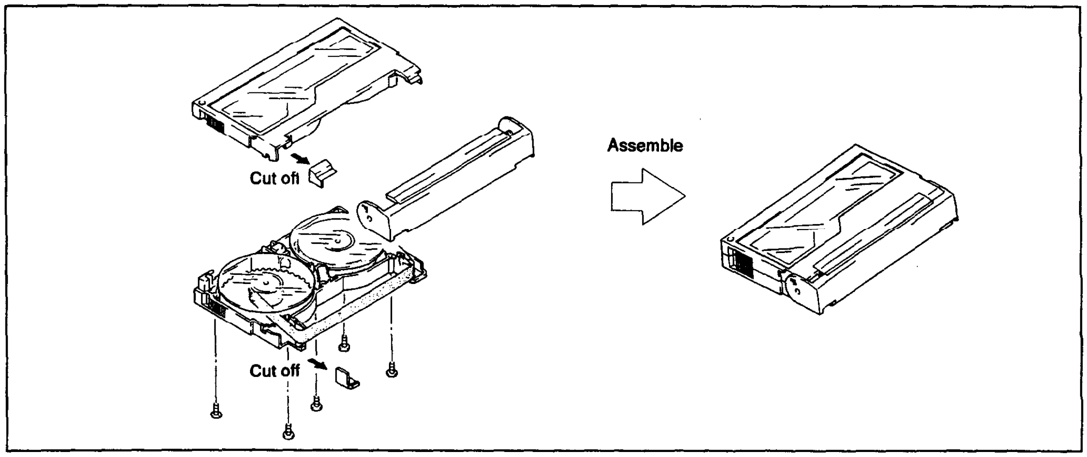


Fig. 4-1.

[Note on Adjustment of No.7 Guide (TG-7)]

The height adjustment screw for No.7 guide (TG-7) is located at some distance from the guide (refer to Fig. 4-2).
Therefore, when performing section 4-6. No.7 Guide (TG-7) Adjustment it is convenient to use the alignment tape for tracking (Ref. No. J-5), modified as follows, and perform adjustment in playback mode.


Cut off
Cut off
Assemble

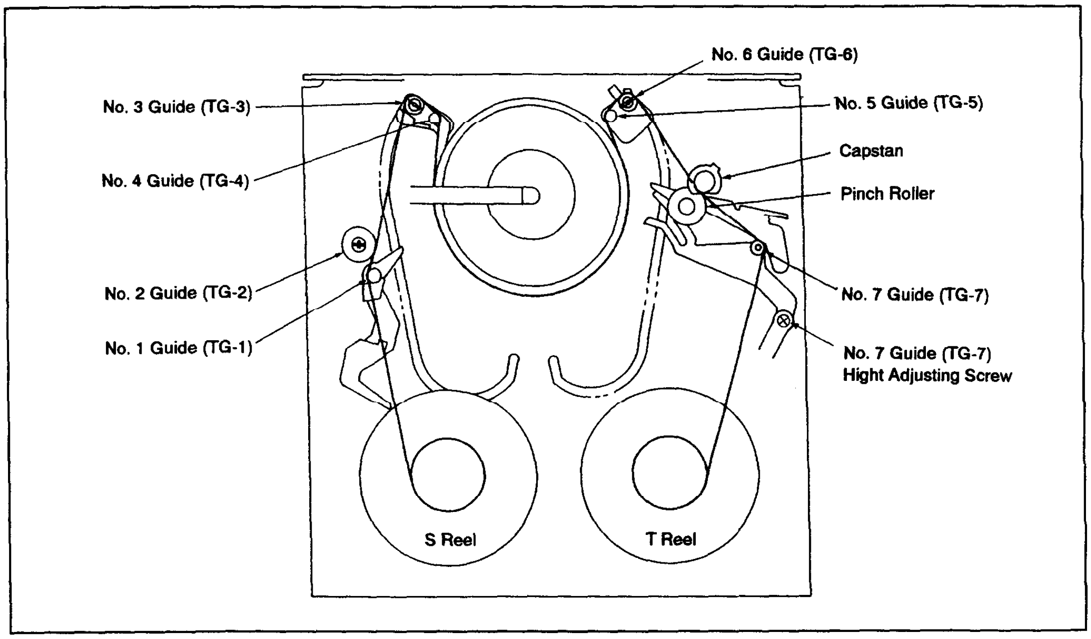

No. 6 Guide (TG-6)
No. 3 Guide (TG-3)
No. 5 Guide (TG-5)
Capstan
No. 4 Guide (TG-4)
Pinch Roller
No. 2 Guide (TG-2)
No. 7 Guide (TG-7)
No. 1 Guide (TG-1)
No. 7 Guide (TG-7)
Hight Adjusting Screw
S Reel
T Reel

Fig. 4-2.

4-2. PREPARATIONS FOR ADJUSTMENT

1) Clean tape path surfaces (tape guides, drum, capstan shaft, pinch roller) (See Fig. 4-2).
2) Connection of oscilloscope and output method of waveform.
   CH 1: RF signal output of the drum head (V RF OUT)
   Method for signal output:
   Short-circuit the external trigger output (RF SW. P) and GND.

   Example:
   NTSC ····· GV-8
   PAL ······· GV-8E
   CH 1: Pin ③ (V RF OUT) of CN018 on the
   { SV-34 board (GV-8)
   { SV-35 board (GV-8E)
   Method for signal output:
   Short-circuit pin ① (GND) and pin ② (RF SW.P) of CN018 on the
   { SV-34 board (GV-8)
   { SV-35 board (GV-8E)
3) Play back the alignment tape for tracking adjustment (Ref. No. J-5).
4) Confirm that both the entrance and exit side RF waveforms of the oscilloscope are flat (See Fig. 4-4). If they are not, adjust as follows.

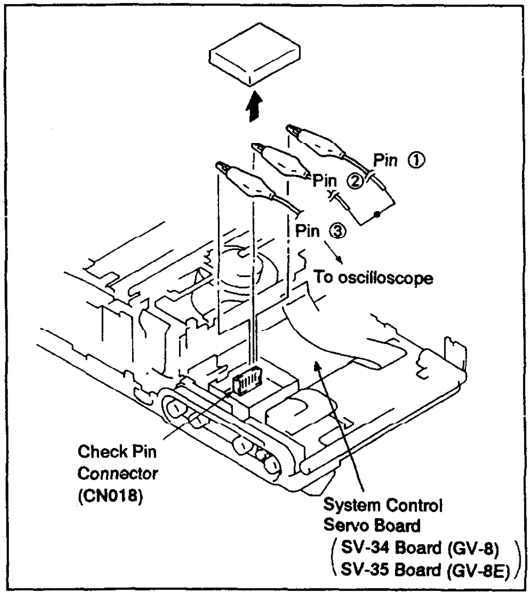

Pin ①
Pin ②
Pin ③
To oscilloscope
Check Pin Connector (CN018)
System Control Servo Board
(SV-34 Board (GV-8)
SV-35 Board (GV-8E))

Fig. 4-3.

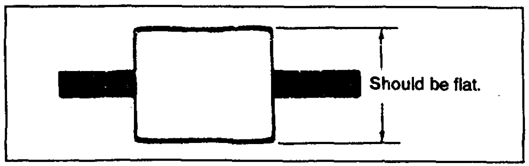

Should be flat.

Fig. 4-4.

4-3. TRACKING ADJUSTMENT (See Fig. 4-5.)

1) Play back the alignment tape for tracking adjustment.
2) Pass a hexagonal wrench, screwdriver (Ref. No. J-11) or the like through the hole ❶, loosen the lockscrew ❷ a little, then make the entrance side waveform flat by turning the No. 3 guide (TG-3) ❸.
3) Pass a hexagonal wrench, screwdriver or the like through the hole ❹, loosen the lockscrew ❺ a little, then make the exit side waveform flat by turning the No. 6 guide (TG-6) ❻.

Note: Take care not to loosen lockscrews too much, since guides come loose easily.

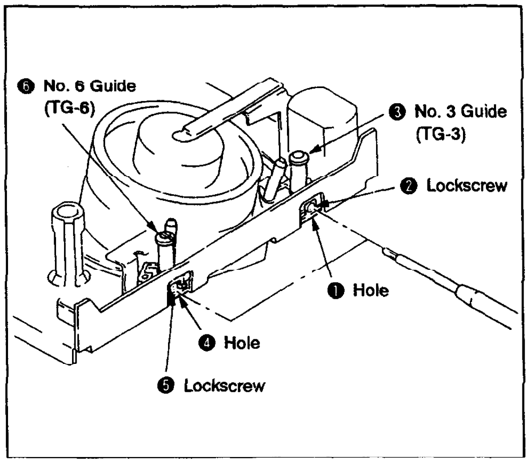

❻ No. 6 Guide (TG-6)
❸ No. 3 Guide (TG-3)
❷ Lockscrew
❶ Hole
❹ Hole
❺ Lockscrew

Fig. 4-5.

4-4. TRACKING FINE ADJUSTMENT (See Figs. 4-5. and 4-6.)

1) Play back the alignment tape for tracking adjustment and set the track shift mode.
2) Confirm whether the waveform is flat. If it is not, turn the No. 3 (TG-3) and No. 6 (TG-6) guides so that it becomes flat.
3) Fix the No. 3 guide ❸ by tightening its lockscrew ❷. Then confirm that the entrance side waveform has not changed.
4) Fix the No. 6 guide ❻ by tightening its lockscrew ❺. Then confirm that the exit side waveform has not changed.

Note: The set screws ❷ and ❺ should be tightened with a tightening torgue of approx. 200g•cm ± 10%.
If tightened too much, there is danger of damaging the thread.

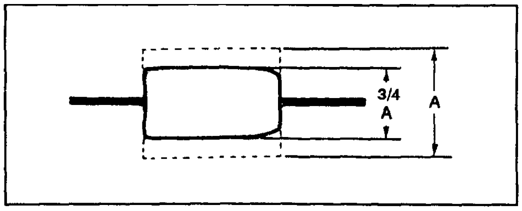


Fig. 4-6.

4-5. No. 2 GUIDE (TG-2) ADJUSTMENT

When the No. 2 guide has been turned or replaced, perform height presetting before this adjustment.

4-5-1. No. 2 Guide (TG-2) Height Presetting (See Fig. 4-7.)

1) Adjust the height from the mechanism chassis upper surface to the TG-2 upper flange ❶ upper surface to 18.6 mm by rotating the TG-2 upper flange ❶.

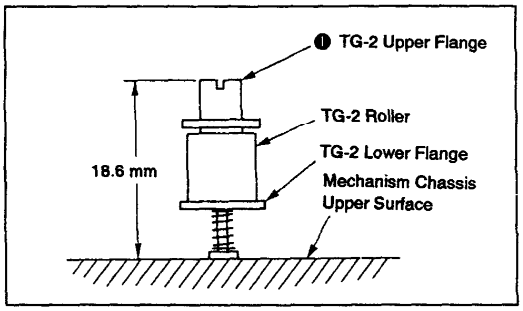


Fig. 4-7.

[Reference]

This U mechanism is equipped with four adjustable guides (TG-2, 3, 6 and 7). To raise or lower the respective guide rotate the corresponding adjustment screw as shown below.

Guide	Guide adjustment	Rotating direction of adjustment screw
TG-2, 3, 6	Raise	Counterclockwise
	Lower	Clockwise
TG-7	Raise	Counterclockwise
	Lower	Clockwise

4-5-2. No. 2 Guide (TG-2) Adjustment
(See Figs. 4-8. and 4-9.)

1) Play back a thin tape like the P6-120MP, etc. and set the REV mode.
2) Confirm that the tape is not bent at the lower flange ❷ of the No. 2 guide (TG-2) ❶ (See Fig. 4-8). If it is, turn the upper flange ❸ of the No. 2 guide (TG-2) ❶ clockwise with a screwdriver, lowering it until the tape is straightened.
3) Play back the alignment tape for tracking adjustment.
4) Perform tracking adjustment and tracking fine adjustment as described in sections 4-3. and 4-4.
5) In the track shift mode, CUE/REV the tape, then play it back and confirm that the RF waveform rises flat within 2 seconds.
6) If the waveform is not normal (See Fig. 4-9), turn the upper flange ❸ of the No. 2 guide (TG-2) ❶ 90° counter-clockwise and repeat step 5.
   Repeat steps 5 and 6 until a normal waveform is obtained. Then, confirm that the tracking waveform has not changed. If it has, perform fine adjustment of entrance side tracking and repeat step 5.

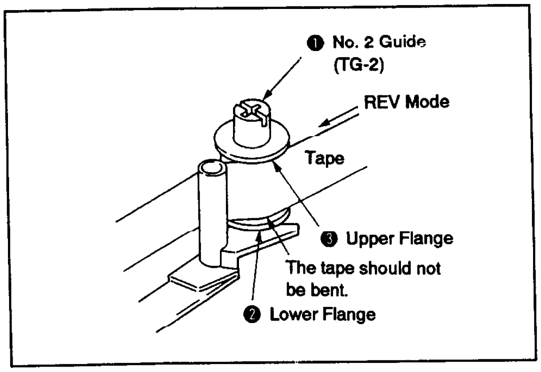

❶ No. 2 Guide (TG-2)
REV Mode
Tape
❸ Upper Flange
The tape should not be bent.
❷ Lower Flange

Fig. 4-8.

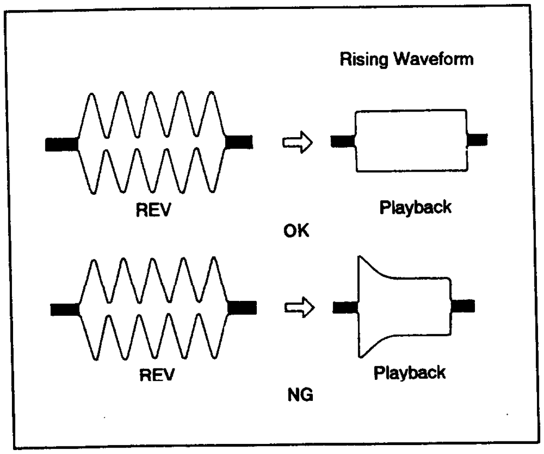

Rising Waveform
REV
Playback
OK
REV
Playback
NG

Fig. 4-9.

4-6. No. 7 GUIDE (TG-7) ADJUSTMENT
(See Fig. 4-10.)

1) Play back the alignment tape for tracking adjustment and set the REV mode.
2) Confirm that the tape is not bent between the No. 6 guide (TG-6) ❶ and the capstan ❷. If it is, turn the hight adjusting screw ❹ of the No. 7 guide (TG-7) ❸ until the tape is straightened.
3) Set the playback mode again and confirm that the tape is not bent between the capstan ❷ and the hight adjusting screw ❹ of the No. 7 guide (specification:0.5 mm or less). If the tape is bent beyond the specification, turn the No. 7 guide (TG-7) ❸ until bending is within the specification (0.5 mm).
   If in the REV mode tape bending between the No. 6 guide (TG-6) ❶ and the capstan ❷ is 0.3 mm or less, adjustment can be considered completed.

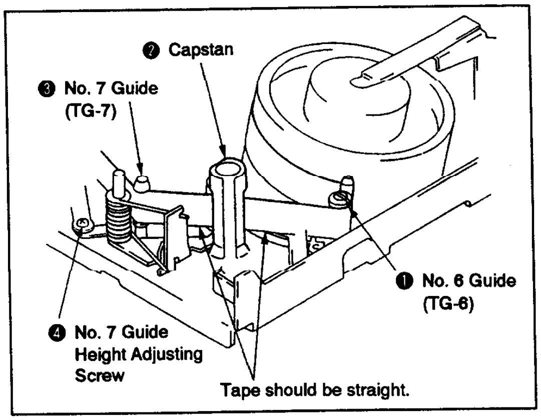

❷ Capstan
❸ No. 7 Guide (TG-7)
❶ No. 6 Guide (TG-6)
❹ No. 7 Guide Height Adjusting Screw
Tape should be straight.

Fig. 4-10.

4-7. CUE AND REV WAVEFORM CHECK (See Fig. 4-11.)

1) Play back the alignment tape for tracking adjustment and set the REV mode. Confirm that waveform peaks maintain a constant pitch of 5 seconds or more (See Fig. 4-11). In case pitch is not constant, perform section 4-4. Tracking Fine Adjustment and section 4-6. No. 7 Guide Adjustment.
2) Set the CUE mode. Confirm that waveform peaks still maintain a constant pitch of 5 seconds or more (See Fig. 4-11). Otherwise, perform section 4-4. Tracking Fine Adjustment.

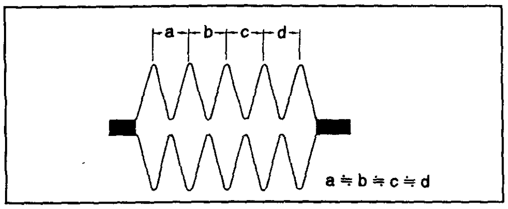


Fig. 4-11.

4-8. CHECK AFTER ADJUSTMENT

4-8-1. Tracking Check

1) Confirm that the amplitude of RF waveform is reduced to approx. 3/4 when the track shift mode is set (See Fig. 4-12).
2) Then, confirm that the minimum amplitude value (EMIN) is 65% of the maximum value (EMAX) or larger (See Fig. 4-13).
3) Confirm that no large fluctuations occur on the waveform (See Fig. 4-14).

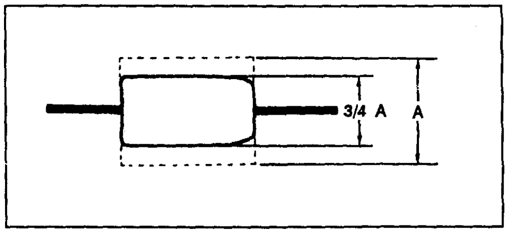
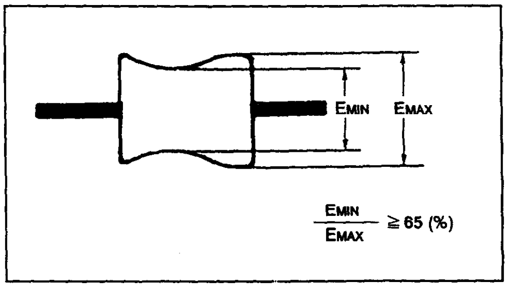
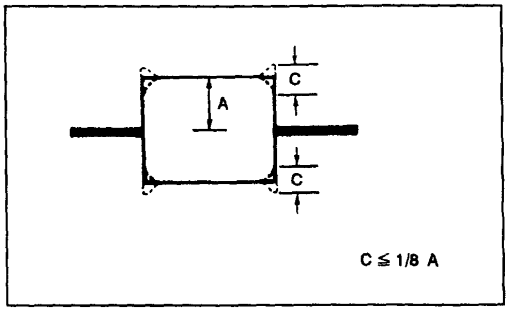


Fig. 4-12.



$$\frac{E_{MIN}}{E_{MAX}} \geqq 65\ (\%)$$

Fig. 4-13.



$C \leqq 1/8\ A$

Fig. 4-14.

4-8-2. Rising Check (See Fig. 4-15.)

1) Play back the alignment tape for tracking adjustment.
2) Cancel the track shift mode.
3) Eject the tape, then load it again.
4) Set the playback mode and confirm that the RF waveform rises flat within 2 seconds. Also confirm that the tape is not bent around the pinch roller (See Fig. 4-15).
5) CUE/REV and FF/REW the tape, then play it back and confirm that the RF waveform rises flat within 2 seconds. Also confirm that the tape is not bent around the pinch roller.
6) Repeat steps 3) to 5) once more.

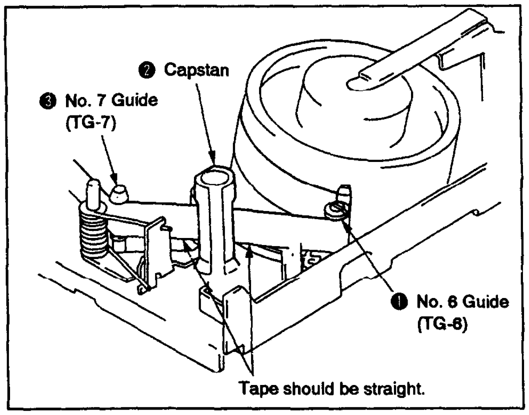

❷ Capstan
❸ No. 7 Guide (TG-7)
❶ No. 6 Guide (TG-6)
Tape should be straight.

Fig. 4-15.

4-8-3. Tape Path Check (See Fig. 4-16.)

1) Play back a thin tape like the P6-120MP (NTSC) or P5-90MP (PAL), etc. and confirm that no tape rising occurs, and that curling is less than 0.3 mm, at the lower flange of the No. 2 guide, the upper flange of the No. 3 guide, the upper flange of the No. 6 guide and the No. 7 guide upper and lower flanges.
2) Confirm that no tape rising occurs and that curling is less than 0.3 mm at the flanges of all guide when pressing the FF button in the playback mode to set the CUE mode, or the REW button to set the REV mode.

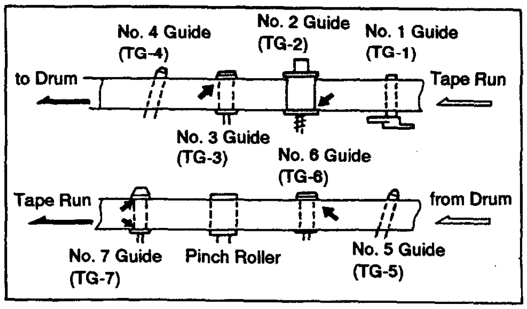

No. 4 Guide (TG-4)
No. 2 Guide (TG-2)
No. 1 Guide (TG-1)
to Drum
Tape Run
No. 3 Guide (TG-3)
No. 6 Guide (TG-6)
Tape Run
from Drum
No. 7 Guide (TG-7)
Pinch Roller
No. 5 Guide (TG-5)

Fig. 4-16.